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NEW TIMES

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LASER: A WORKER, NOT A SOLDIER

Horizons of Modern Technology

The Lure of the Sea

In this age of space flights the sea has lost some of its lure for the young. Librarians will tell you that Robert Louis Stevenson and Konstantin Stanyukovich are less popular reading among today's teenagers than was the case in their parents' youth. Nowadays youngsters want to know about Mars, about the stars, about proton synchrotrons and microcircuits.

Nevertheless every year 600 boys come to this centre on the banks of the Moskva River, which has been functioning for nearly 30 years now within the city limits, not far from Moscow's Southern Port. They come here to learn the rudiments of navigation, of marine and river shipping. To learn that the modern navy and merchant marine are not a matter of flashing oars, the rustle of sails or smoke curling up from white funnels, but of complicated machinery, sophisticated instruments and the latest in computers. That the country today needs seamen no less than cosmonauts.

But that will come later. To begin with, the youngsters are introduced to the ABC's of seamanship. For them this means head winds in their faces, pulling heavy oars, sweat-soaked jerseys, shipboard discipline, neatness and order. And during the summer holidays—trips on training vessels to Leningrad, Volgograd or Novgorod.

All this is fascinating but far from easy. Some lads, disillusioned, soon give it up. But some acquire a lifelong love for the water, enroll in marine and river transport schools, or join the navy. Some 6,000 have done so since the centre was founded.

But the main purpose is not only to train future seamen, navigators and captains. It teaches them to be self-disciplined, strong and brave, and to appreciate the value of friendship. Their instructors are veteran seamen, seasoned professionals experienced in life.

In charge of rowing practice is Alexander Essen. He comes from a family of distinguished Russian sailors, 14 of whom have left their mark in the history of the Russian fleet. Kurt Essen was presented by Peter I with a dirk for bravery. Nikolai Essen was one of the heroes of the defence of Port Arthur in the Russo-Japanese war and commander of the Baltic Fleet during World War I. Alexander Essen's life, too, has been associated with the sea, and he has much to tell his young trainees about voyages to distant lands, about the present and future of the navy, about its finest traditions.

Here on the banks of the Moskva River one seems to hear the roar of ocean gales, the crash of breakers, the eternal call of the sea....

At the pier.

Alexander Essen, the descendant of renowned sailors.

Photo by B. Kaufma

THE MORATORIUM TOUCHSTONE

Now that Reykjavik has proved the feasibility of removing the nuclear threat, the need for practical action is all the more pressing. The fact that the problem of nuclear disarmament involves great difficulties does not mean that it should be swamped in more difficulties introduced artificially. The decisions required to get things moving are simple enough.

The Soviet Union has already taken the first step towards universal disarmament: the moratorium on nuclear tests announced 15 months ago and extended four times since then. This, in itself, bears witness to the consistency of Soviet policy. And so while blasts thunder in Nevada, quiet reigns in the Semipalatinsk area. The seriousness of our intentions and of the consequences that could ensue from this decision is obvious, for new weapons cannot be developed without testing. It was this that prompted the Soviet Union to suspend nuclear tests last August, forty years after Hiroshima which is a symbol of the horrific effects of nuclear weapons. The moratorium is the expression of our desire to eliminate them.

The United States' refusal to join the moratorium speaks for itself in this context. When the nuclear test issue came up at Reykjavik, the American side voiced what proved to be merely verbal readiness to discuss it. The American concept of the negotiations as a long, multi-stage process concerned with particulars amounts to a kind of filibustering intended to obstruct progress in this vital matter. The aim is to sidestep a ban on tests and retain the chief means of perfecting weapons of mass destruction.

Considering the almost 100-per-cent reliability of test ban verification and the Soviet Union's consent to it in any form, ending nuclear testing is a simple and universal means of reducing the nuclear danger and effecting a dramatic change for the better in the world. At the same time, a country's stand on the nuclear test ban issue is an index of its true attitude to nuclear disarmament.

Washington underrates the importance of the Soviet moratorium and plays up its own role in the post-Reykjavik period. Moreover at a crucial stage in our history, when deadly weapons are being developed and stockpiled faster than ever before. Evading action, talking about agreements instead of trying to reach them, and seeking superiority instead of accepting the principle of equal security--all this constitutes the main threat to peace today.

FROM OUR MAILBAG

I may be wrong but it seems to me that we ourselves are helping the Americans to strike a pose of fighters for peace, freedom and justice. Our press reports of Soviet peace proposals are often followed by the phrase—"It is now up to Washington." As if any really reciprocal initiative is forthcoming from the American side. Let us stop regarding the fine words and television charm of the American President as a striving for peace.

V. MARTYNOV
Omsk, U.S.S.R.

In Buenos Aires, where I live, there are dozens of daily papers, weekly and monthly magazines which are constantly talking about the atrocities of Soviet soldiers in Afghanistan. Add to this the "cultural bombardment" to which we are daily exposed through the radio and TV and it may be easier to understand why so many of my compatriots still believe that despicable lie. In reality we see that the Soviet Union displayed good will by withdrawing part of its troops from Afghanistan.

Jose Maria NOGUEIRA
Buenos Aires, Argentina

I've read the remarks of Herr Wolfgang Schmider in support of European missile deployment [No. 28, 1986]. As one who participated in the campaign against cruise missile testing in my own country, I can say that I do not share Herr Schmider's disdain for the "voices from the streets." I am sure that there is no strategic consideration that will ever compel those participants in the fight for peace to join Herr Schmider in his enthusiastic embrace of SDI and missile deployment.

Karl ETTINGER
Port Alice, Canada

NEW TIMES

A SOVIET WEEKLY OF WORLD AFFAIRS

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Cover photo: Measuring the distance to the Moon by laser.

Photo by G. Koposov

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LASER: A WORKER, NOT A SOLDIER

Today lasers are found everywhere, from minute semiconductor devices to large installations for controlled thermonuclear fusion

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NEW THREATS

General of the Army Vitaly SHABANOV, Deputy Minister of Defence, on the dangers inherent in the buildup of conventional weapons

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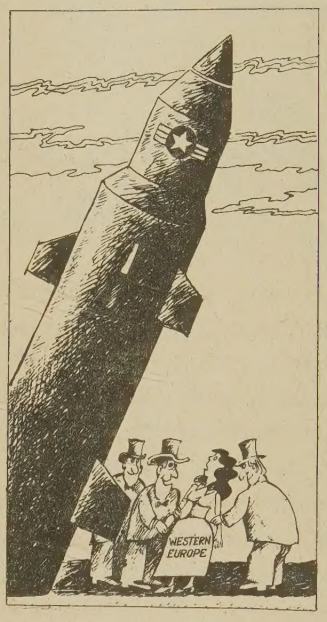

THEIR HOPE OF SALVATION

The thought of a nuclear-free world frightens the West

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HAS THE LION WOKEN UP?

In the course of a single week London severed diplomatic relations with Syria and proclaimed a 150-mile "closed" zone around the Falkland (Malvinas) Islands

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LOMONOSOV

The man Pushkin called "the first Russian university"

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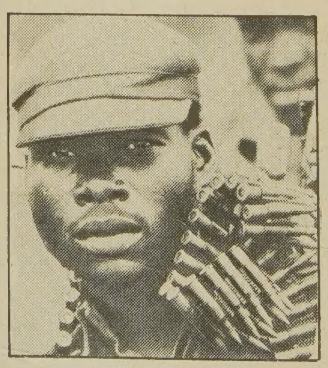
CONSPIRACY AGAINST MOZAMBIQUE



The people, after Samora Machel's death, are mustering all the country's resources to preserve the gains of the revolution and ensure the building of socialism

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Editor-in-Chief: VITALY IGNATENKO

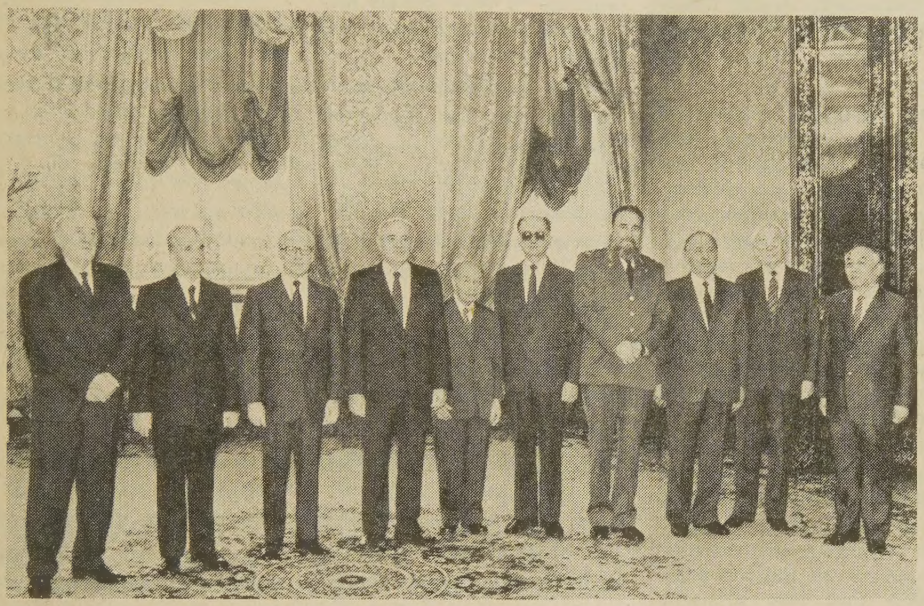
Associate Editors: L. BEZYMENSKY, V. CHERNYAVSKY, S. GOLYAKOV, Y. GUDKOV, A. LEBEDEV, A. PIN, B. PISHCHIK, A. PUMPYANSKY, V. TSOPPI

Design by A. GARANIN

Editor of English edition: E. SMIRNOV

MOSCOW SUMMIT

The leaders of the fraternal parties of the CMEA countries meet



A working meeting of the leaders of the Communist and Workers' parties of the member countries of CMEA took place in Moscow on November 10-11. It was attended by Todor Zhivkov, Janos Kadar, Truong Chinh, Erich Honecker, Fidel Castro, Jambyn Batmunh, Wojciech Jaruzelski, Nicolae Ceausescu, Mikhail Gorbachev and Gustav Husak.

The leaders of the fraternal parties discussed cardinal problems of the development and further improvement of cooperation among the socialist countries, and the possibilities for drawing more fully on the potential of socialism. Particular attention was devoted to the deepening of economic relations, the use of new and more progressive forms of economic management and scientific and technological interaction in the interests of speeding the social and economic development of the fraternal countries and raising the well-being of their peoples.

There was an exchange of opinions on topical questions pertaining to the situation in the world today. The participants in the meeting approved the principled stand of the Soviet Union in Reykjavik and stressed the need to step up joint efforts aimed at eliminating nuclear and reducing conventional arms, strengthening peace and international security.

The meeting was held in an atmosphere of cordiality and frankness, mutual understanding and unity on all the issues examined.

TASS photo

CMEA

Priorities of Cooperation

● THE COUNTRIES OF THE SOCIALIST COMMUNITY CO-ORDINATE THEIR ECONOMIC PLANS.

The CMEA session in Bucharest went on record that the progress of the fraternal countries depended in large measure on how quickly they can restructure the machinery of cooperation. It was agreed that fundamental changes in the system of operating international ties were needed and that the economic mechanisms of our countries must be brought closer together. Only in this way will it be possible to implement the comprehensive programme of scientific and technological progress adopted in 1984.

Much has been done. At the present session it was noted that the large-scale international cooperation envisioned in the programme had already developed into a system of interconnected agreements and accords between concrete enterprises and branches of industry. A month ago the U.S.S.R. and the Polish People's Republic signed an agreement on the establishment of joint economic enterprises and the Soviet Union has concluded similar agreements with Hungary, the G.D.R., Bulgaria and Czechoslovakia. "We stand firmly for the utilization of new forms of cooperation, for broadening direct contacts and establishing joint enterprises and organizations," Soviet Premier Nikolai Ryzhkov, the head of the Soviet delegation, said.

The Soviet Union and other CMEA states are vigorously restructuring their foreign economic activity, with the emphasis being shifted from the ministries directly to the producer—the plant or factory. The raw material requirements of the fraternal countries are already being met by deliveries from the Soviet Union or by joint enterprises operating on the principles of self-financing and cost-accounting.

Plans for the current five-year period were coordinated in Bucharest, with a view to making the community's technological and economic advance immune from possible adverse effects of the capitalist economy. New participants are being drawn into the international division of labour, mainly from among the developing countries which stand for independent development, for the restructuring of international economic relations on a just basis. There has been a significant expansion of the CMEA's ties with Nicaragua, Mozambique, Mexico and Iraq with which interstate agreements have been signed. The session endorsed the agreement on CMEA cooperation with the People's Republic of Angola, Socialist Ethiopia and the People's Democratic Republic of Yemen.

The CMEA countries propose to develop mutually

advantageous economic, scientific and technological ties with the West as well. It is prepared to take more energetic steps in this direction, in particular in the matter of establishing official relations between the CMEA as a whole and individual member countries with the EEC. A climate of most-favoured-nation treatment and confidence between the two organizations would undoubtedly improve the international atmosphere. On these grounds the CMEA countries declared for establishing a world forum to discuss all the problems inhibiting world economic ties, and hence the entire normal life of the world community.

B. KOZLOV

U.S.

Elections Over—What Next?

● THE DEMOCRATS NOW CONTROL BOTH HOUSES OF CONGRESS. HOW WILL THEY CAPITALIZE ON THEIR NEW POSITION?

Contrary to forecasts, the November 4 mid-term elections have given the Democrats a 55-45 seat majority in the Senate, overturning a Republican majority of 53 seats to 47. In the House of Representatives the Democrats have increased their majority by six. The Republicans, however, now have eight more state governors.

As a rule, national issues remain in the background during campaigning. They are gladly and skilfully supplanted by various local concerns. This is especially true of congressional elections in which candidates run from different states. The elections just over ran true to course, but only superficially. James Reston, the celebrated news analyst, condemned the campaign as "a disgrace," observing that the candidates overtly sidestepped "critical national issues."

The campaign also set a new high for electoral expenditure, which topped one billion dollars, with the Republicans spending five times more than the Democrats. The Republicans largely relied on the popularity of the President who made 54 speeches in 22 states in just a few days.

The results are therefore all the more significant. The Democrats now control the legislature, which places them willy-nilly in opposition to the executive. For this national issues are in the main responsible. No wonder, commentators observe, many voting for a Republican governor voted for a Democrat in Congress. The loser, they say, is the President.

The first practical consequence will be a change of leadership in the Senate committees that debate government decisions and draft legislation on the basis of presidential bills. This primarily concerns the Foreign Relations, the Armed Services, the Budget, the Judiciary and the Appropriations committees. With a majority in both houses the Democrats will be in a position to ensure that their views are reflected in government policy.

So far nobody has dared predict what sort of line they will take and whether there will be any overall changes, as on specific issues many Democrats are further to the right than their Republican rivals.

The White House, for its part, has already defined its position. The statement it issued immediately after the elections stressed that despite changes in the Senate the Administration's agenda remains unaltered.

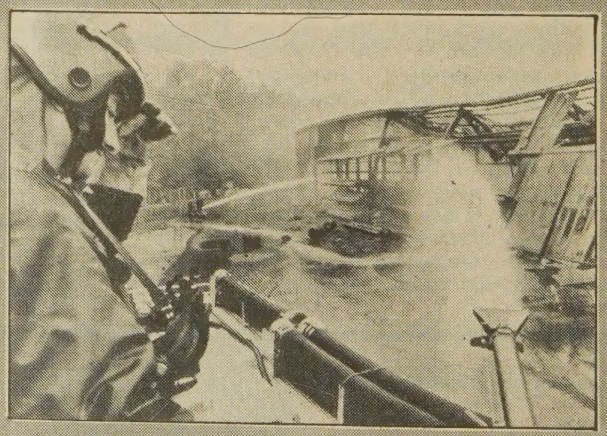
What will the Democrats do? Will they heed the electorates' obvious concern about national issues? These issues are far from simple, particularly as they are already well known. They include the inordinately inflated military spending, arms control, armed intervention in Nicaragua using the contras, and the perilous instability of the U.S. economy. "Reaganism is no longer attractive," commentators maintain, assessing the message from voters. However, this will require decisive action from the Democrats as opposed to their merely taking note of the problems. And therein lies the rub.

There is some evidence to indicate that the Democrats want changes. It is enough to recall their amendments to the budget bill for the 1987 fiscal year, their proposals for a year-long moratorium on nuclear tests in excess of one kiloton, a ban on satellite-killer testing and the manufacture of binary chemical shells and for a sharp cutback in the military budget and "star wars" appropriations. Their boldness, though considerable, was unfortunately, shortlived. Charges that the Democrats were "tying the President's hands" before the Reykjavik summit appeared to be enough to postpone amendments indefinitely.

Will the Democrats be resolute enough to implement the electoral mandate? Only they can say. Meanwhile Senator Sam Nunn, who will now chair the Armed Services Committee, has advised that no great changes can be expected in committee business, AP reports. But Claiborne Pell, the future Foreign Relations Committee Chairman, has other views, "I think," he says, "there will be a greater emphasis on arms control and ratifying some treaties, like the (nuclear) test ban treaty. There will be less emphasis on the contras, who we know are terrorists."

Meanwhile the Pentagon is poised to violate SALT 2 shortly—when the 131st cruise missile-carrying B-52 bomber becomes operational. What will the Democrats do in Congress?

Y. GUDKOV

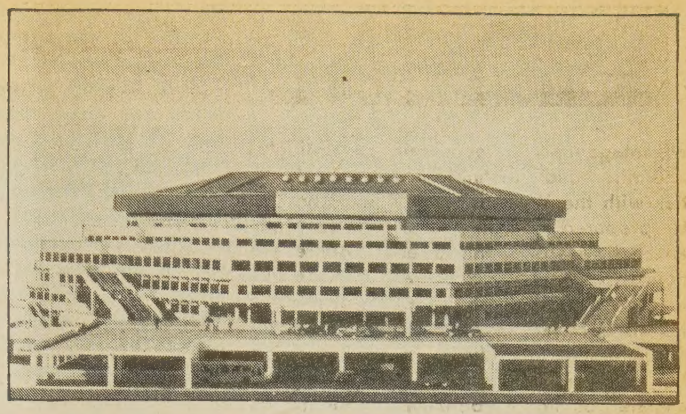


The fire at the warehouses of the Swiss Sandoz A.G. chemical concern in Basel has resulted in a grave ecological disaster. Discharges containing mercury have been released into the Rhine and have killed fish and algae. Experts fear that mercury compounds may contaminate food and jeopardize the health of people living along the river in Switzerland, France and the F.R.G.

AP-TASS photo

Vienna: Off to a Start

SERGEI GOLYAKOV
our special correspondent



The all-European meeting will confer in this new building of Austria Centre by next spring, when construction will have been completed.

The third meeting of the representatives of the participating states in the Conference on Security and Cooperation in Europe got off to a start after Reykjavik, where for Europe a turn towards a denuclearized world had taken a realistic shape. Responsibilities and hopes are high. It will be some time before we learn what is decided in Vienna.

Here is an account of the beginnings.

Procedure

I shall not distract you by describing the externals. No doubt you will have seen the gentle autumn tints of Vienna's gardens and streets and the flags bravely fluttering from the façade of the central hall of the Hofburg Palace on your TV screens. It is difficult for a journalist to compete with the colours of television.

In line with the procedure endorsed by the representatives of the 35 countries before the meeting began, it is to keep to a strictly defined timetable. The basic principle is to have a productive meeting rather than mere verbiage. The first week has been given over to introductory statements—each to last no more than 30 minutes—to be made by the foreign ministers of the 35 countries. The second week is to be devoted to an in-depth exchange of views concerned not only with the implementation of the provisions of the Helsinki Final Act and the Madrid document, but also with aspects of the future development of détente.

This phase is to end by February 18, 1987. After the general discussion begins, the auxiliary work teams for all three "baskets" of the Final Act will start to meet. A recess will be announced on December 20, after which the meeting will resume on January 27. The second recess will fall between April 11 and May 4. It is expected that the final document will be agreed on not later than July 31 of next year.

The consensus is that the meeting will culminate, whatever the outcome, in the adoption of a final document and the naming of the place and date for the next conference. The special significance attaching to this point was emphasized by Austrian Chancellor Franz Vranitzky in his inaugural address. The continuity of the all-European process has been removed from the realm of controversy, the Federal Chancellor said, adding that, irrespective of other concrete results, the conference would be brought to a conclusion only when the place and time of the next follow-up meeting had been settled, which means that the all-European process's future continuity can no longer be made the hostage of any other political demands.

Hospitality

Austria's neutrality, geographical location in the heart of Europe and vigorous participation in world affairs have made Vienna the venue for crucial political meetings, including summits. In the U.N.-City, the Vienna International Centre, we find the headquarters of the International Atomic Energy Agency and the U.N. Industrial and Development Organization.

The Austrian capital, which is always neat, subdued and well-groomed, also extended a hospitable welcome to the participants in the all-European forum. This city of Strauss and Kafka, one that has given its name to crucial political treaties, conventions and acts, is now serving to stimulate the shaping of a new European reality, and strengthen the structures of peace in this continent.

The Austrian news media commented extensively on the meetings and conversations of Soviet Foreign Minister Eduard Shevardnadze with Austrian President Kurt Waldheim, Federal Chancellor Franz Vranitzky and Foreign Minister Peter Jankowitsh. Though various issues were discussed, the dominant topic was concerned with bilateral relations in the broad context of the all-European process.

One more series of meetings held the limelight here. In line with an accommodation reached earlier, the Soviet Foreign Minister met with his U.S. counterpart twice in Vienna—on November 5 and November 6. For the first meeting Eduard Shevardnadze went to the U.S. embassy. For the second, George Shultz came to the Soviet embassy. They had more than five hours of talks. Newsmen were told that George Shultz would announce the results at a news conference as soon as he got back from the Soviet embassy.

No Going Back

Though the news conference was scheduled for 10.30 a. m., the correspondents and photographers flocked to the Hilton Hotel a couple of hours before it began, packing the small hall. To maintain security all windows and doors were tightly shut, and we were told that nobody could leave until the press conference was over. However, we bore up in the cramped and stuffy atmosphere in the hope of hearing good news.

George Shultz, immaculate but gloomy-looking as always, turned up almost on the dot, surrounded by a veritable legion of bodyguards. He looked tired and worried. Reuters condensed his eight-minute statement into a few lines, noting that U.S. Secretary of State Shultz had said that no progress had been made on disarmament during his two meetings with Soviet Foreign Minister Shevardnadze, while the subject of a third summit between Soviet leader Gorbachev and President Reagan had not been raised.

Again, as in Reykjavik, there was a general sigh of disappointment.

On the same day Eduard Shevardnadze also gave his assessments to newsmen. In spite of universal expectations and Washington's professions of a desire to continue what had been started at Reykjavik, he said

before flying home, he had encountered American efforts to withdraw completely from the landmarks reached in Iceland, and slip back to previous levels. Shevardnadze qualified the U.S. stance in both Vienna and Geneva as a mixture of old mothballed views and approaches with those concessions which the Soviet Union put forward at Reykjavik within the framework of the proposed package. However, the Soviet Foreign Minister emphasized, we have not lost hope that sooner or later Washington will realize that the way back is closed and that now we can go only forward towards the complete elimination of nuclear weapons.

Icelandic Refrain

The Icelandic tune rang out in the Hofburg Palace during the general discussion. Italian Foreign Minister Giulio Andreotti noted that what had been offered at Reykjavik would provide a basis for future negotiations.

Due to Washington's space ambitions and its lack of the necessary political will, the decisive move towards nuclear disarmament had not been made. Yet there has been a psychological turn in the tide, Hungarian Foreign Minister Peter Varkonyi observed. "Today nobody can say that the elimination of nuclear weapons is a pipedream and that to seek it is tantamount to tilting at windmills," he said. However hard it is to strive for a world without nuclear arms it is entirely feasible.

But are Western Europe's political leaders prepared to think in terms of a denuclearized Europe? The answer, unfortunately, was somewhat ambivalent. When at last realistic opportunities presented themselves for ridding the continent of missiles, some NATO representatives started saying that it was necessary to keep U.S. nuclear weapons in Europe, and upheld their nuclear-status privileges. French Minister of External Relations Raimond staggered everyone when he declared from the rostrum: "There is no alternative for humanity to the nuclear deterrent, which serves peace and should continue to guarantee security in our continent."

How greatly removed is this philosophy from the true cares and aspirations of Europeans! "People in our countries and, especially, young people are greatly concerned for the future," Swedish Foreign Minister Sten Andersson said. "We often feel this as politicians when we meet our voters. We see it in factories, schools and churches. We learn about it from public opinion polls and, not last, from the peace movement. People are particularly worried by the danger of a nuclear war which will imperil the march of our whole civilization." To eradicate that danger means ridding our European home of the stockpiles of nuclear-missile and conventional weapons, cultivating the beginnings of military détente in the continent, and strengthening confidence.

After Madrid, it was noted, a great stride has been made in that direction. In Stockholm awareness of the vital interests of the participants in the all-European process lessened suspicion which materialized in a range of concrete commitments and the adoption of the principle of the non-use of armed force, one that should dominate international relations. Stockholm 1 paved the way for Stockholm 2, for tangible disarmament in Europe. The overwhelming majority of speakers agreed that this was so.

Naturally, different states have their own views as to how to advance further. In Vienna these matters have yet to be debated. The important thing, however, is not to slacken the pace. It has been suggested that parallel action be taken at several levels. More specifically, pending the finalizing of the mandate for Stockholm 2, it is proposed to arrange for contacts between the working teams from the NATO and Warsaw Treaty countries. By their efforts the experts could yield exciting practical results.

Of paramount importance is the fact that Europe's destiny stands above all bloc approaches, that it should be shaped by all countries in Europe, including the neutral and non-aligned states, at a broad all-European conference.

The Warsaw Treaty states have put forward a balanced programme for European disarmament from the Atlantic to the Urals. In Vienna, Greek Foreign Minister Carolos Papoulias took a positive view of these initiatives, which he called "thoroughly weighed decisions" capable of promoting European disarmament. But as for the other members of the Atlantic alliance, and NATO as a whole, they remain silent.

Confrontation Rhetoric

Due to important business, Secretary of State George Shultz was not able to come to Vienna for the opening. He was also late for his scheduled speech, for which reason G.D.R. Foreign Minister Oskar Fischer, then in the chair, had to announce an unplanned break in expectation of Shultz's arrival. Meanwhile it was rumoured among U.S. correspondents that instead of driving to Hofburg straight from the airport, the Secretary of State had had to call at the U.S. embassy on his way supposedly to collect the latest directives. It was also learned that the text of his statement prepared for release had been urgently withdrawn from the press centre by the U.S. delegation.

Taking the floor at last, George Shultz spoke in a low monotonous voice. However, his aim was soon clear. This was to generate a tone of confrontation, to thrust upon the socialist countries his own code of behaviour as concerns human rights. At times the Secretary of State's rhetoric went too far. Naturally, he boosted SDI as the sole programme capable of ensuring more stable strategic security.

But why should disarmament be subject to great-power, hegemonistic interests? Europe's historic chance derives not from power politics and armed might, but from the power of politics.

New Initiatives

The Soviet Union and the other socialist countries have been urging this path at Vienna. The neutral and non-aligned states see movement in this direction as breaking the impasse. The concept of European security looms increasingly as the objective of erecting political, material, organizational and other structures by joint effort. To that end it is necessary still more vigorously to fill all three baskets of the Helsinki accords with tangible fruit. Arguments as to which of them should take precedence are futile, inasmuch as each complements and reinforces the other two.

So what new initiatives and proposals were made during the general discussion? Here is a list of the main suggestions:

—to convene in Moscow a representative conference of the participating states in the all-European conference devoted to problems of humanitarian cooperation, including human contacts and aspects of information, culture and education (Soviet proposal);

—to convene in Prague an economic forum that would consider in the first instance positive trends and effective forms for the future promotion of European economic cooperation (proposed by Czechoslovakia conjointly with some other countries);

—to hold a European meeting of experts (proposed by Romania), and to convene a forum of scientists of the 35 countries (proposed by Italy) to evolve new forms for scientific and technological cooperation;

—to convene a sweeping, representative ecology forum attended not only by experts but also by representatives of ecological movements (proposed by Bulgaria);

—to deem it appropriate and useful for all the participating states in the European process to ratify human rights pacts (a Polish initiative).

The Vienna conference has got off to a start. Europe expects it to yield significant political results. They will be forthcoming provided the new political way of thinking prevails as the sole instrument capable of piloting the ship of Europe into the harbour of peace, security and cooperation. Bon voyage, Vienna!

■

What is the military-strategic situation in Europe? How do matters stand as regards conventional weapons?

"CONVENTIONAL" WARFARE: NEW DANGERS

General of the Army VITALY SHABANOV,
Deputy Defence Minister of the U.S.S.R.

Preventing a conventional war in Europe is a pressing political and military-strategic objective. Such a war could bring untold suffering to the people of the continent and, furthermore, would entail a considerable chance of its developing into a nuclear war.

The massive use of conventional weapons during the second world war had catastrophic consequences. Academician Moiseyev writes that when at the end of the war the British and Americans bombed Hamburg and Dresden, "the energy concentration was so high as to cause a fire storm or tornado—a self-sustaining chain reaction of combustion. Everything burned—wood, plastics, metal and reinforced concrete. The fires grew stronger and covered increasingly large areas. Clouds of black smoke obscured the sunlight." (This was later to prompt scientists to study the climatic effects of large-scale fires caused by nuclear explosions.)

A vast number of cities and villages were destroyed in the Soviet Union, Poland, Czechoslovakia, Britain, France, Germany and other countries. Untold damage was done to industry and agriculture. And yet it was a war waged by "conventional" means at the scientific and technological level of the time.

Today Europe has the two biggest groupings of armed forces in the world confronting each other. Mountains of the latest weaponry—nuclear, chemical and coventional—have been accumulated. According to some estimates, there are 20 times more weapons in Europe than the average for the planet.

The latest U.S. medium-range ballistic and cruise nuclear missiles deployed in the European NATO countries pose a particular danger. To the Warsaw Treaty countries, they represent first-strike weapons and their deployment is by no means a sign of U.S. concern for European security. The underlying aim is to ensure a capacity for "preemptive" strikes at Soviet intercontinental ballistic missiles and vital targets in the western parts of the U.S.S.R. to weaken possible retaliatory strikes against U.S. territory.

More and more leaders, politicians and scientists the world over, including those in the U.S., are becoming aware that a nuclear war cannot be won.

Breaking "Nuclear Deadlock"?

According to NATO strategists, one way out of the "nuclear stalemate" is to develop and manufacture conventional weapons. At the same time, they continue the race in nuclear-missile weapons and do not rule out their use at a certain stage in the escalation of war.

The NATO Council session held in Washington in May 1978 adopted a military programme for 1978-93 envisaging further improvements in general-purpose arms and military technology. Special emphasis is laid on raising the offensive capability of troops stationed in Europe. In 1984, the NATO countries committed themselves to doubling their allocations for the development of conventional forces.

The Pentagon is drawing up plans for "global non-nuclear warfare," a "major non-nuclear conflict between the U.S. and the Soviet Union" and a "full-scale global non-nuclear war."

So far "conventional forces" have only been used in regional conflicts, but even so they have claimed about 35 million lives since 1945. During this period U.S. imperialism, pursuing its political goals, has resorted to military force against other states and peoples some 250 times. So far, it has not dared to use force in Europe.

But is our continent ensured against such a trial of strength? Admiral Watkins, U.S. Chief of Naval Operations, says in his report on naval strategy that it cannot be predicted where the first shot will be fired, but it is almost certain that the conflict will be linked with Europe. The "Rogers plan" (named after NATO supreme commander in Europe) envisages non-nuclear warfare in Europe with conventional weapon strikes across the whole depth of the Warsaw Treaty defences. General Rogers constantly demands that NATO countries further improve conventional weapons in line with the latest technology, with the aim of attaining military and military-technological superiority over the Warsaw Treaty countries. The U.S. and its NATO allies are increasingly using the achievements of modern science and technology in developing ever newer and more highly effective weapon systems. If the mass destruction of troops within the shortest time is a criterion of the effectiveness of a nuclear weapon, some models and systems of conventional weapons are already approaching the level of effectiveness of tactical nuclear arms.

The armed forces in the NATO countries have many cluster weapons, i.e., artillery and rocket shells, tactical missile warheads, aircraft missiles and bombs, special containers filled with large number of smaller shells of various designs and purposes to be used against people, unarmoured or lightly armoured vehicles, and tanks.

A salvo of one division of 240-mm MLRS rocket system carries several tens of thousands of subshells which hit targets over an area larger than that covered by artillery nuclear shells.

During the Vietnam war the U.S. used so-called vacuum bombs which spray a mixture of air and fuel and blow up the clouds formed in this way. Peope caught in the area of the cloud die from the blast or suffocate as the oxygen burns up at the moment of explosion. Vacuum shells are about 4 times as effective as conventional high-explosive bombs of the same mass. The effectiveness of vacuum shells is increased by raising the heat value of the fuel, better spraying and ensuring optimal ignition conditions.

Napalm weapons and napalm itself are being improved: its burning temperature is being increased, and its degree of adhesion to clothes and the human body heightened; napalm is becoming self-igniting. New compositions of this type currently being developed have a much greater destructive effect.

Of late, the NATO countries have been concerned to improve the accuracy of fire, and create highly accurate shells which make it possible to destroy key small-sized targets within a minimum of time. The impact on the enemy's positions would be similar to that of nuclear warheads.

NATO headquarters are planning

simultaneous deep strikes at Warsaw Treaty troops. Given quick military manoeuvres, this would make vulnerable considerable areas of the Warsaw Treaty countries (cities, industrial and agricultural targets and the population) which would be the theatre of hostilities.

Large-scale use of conventional weapons does not rule out deliberate or accidental attacks on the enemy's nuclear and chemical weapons, including stores of nuclear and chemical warheads, launchers, vehicles for storing and moving nuclear warheads and shells, transport-and-loading vehicles, etc. The consequences of this could be equal to the use of all these weapons of mass destruction, thus upsetting the parity of tactical nuclear weapons and triggering unpredictable retaliatory action.

Conventional fire strikes could destroy numerous nuclear power plants and energy installations in Europe. The result would be tantamount to a nuclear attack with consequences far greater than those of the Chernobyl accident.

Most fire attack facilities in the NATO countries are "dual-purpose": the 155-mm guns which are standard in NATO, guns of larger calibre, multiple rocket systems, ballistic and cruise missiles, aircraft missiles and bombs can carry both conventional and nuclear (or chemical) charges. A switch from conventional hostilities to hostilities with the use of weapons of mass destruction can be sudden and unpredictable, which breeds mutual distrust and makes the sides seek to maintain a high level of combat readiness in their nuclear forces, thus increasing the danger of the eruption and escalation of nuclear war.

The use of automatic systems of troop and weapon management, the development of global interreconnaissance systems, and integrated automatic "search and destroy" systems, total mechanization and high mobility of troops and the use of military robots result in more and more control functions passing from man to automatic devices. The quick development of hostilities with sharp changes in the tactical and operational situation, swift advances of enemy troops, the spread of hostilities over large areas in several European countries simultaneously, deliberate disruption of communication channels, round-the-clock and all-weather military operations—all this prevents the political and supreme military command from sanctioning decisions due to shortage of time and information. In extreme cases this could lead to an irreversible escalation of hostilities, including the use of tactical nuclear weapons.

Faced with an unprecedented NATO buildup of conventional as well as nuclear weapons in Europe, the Soviet Union and the other Warsaw Treaty countries naturally have to take countermeasures and develop and manufacture the necessary quantities of all modern types of conventional weapons to equip their armies. Created on the basis of modern science and technology, they are in no way inferior to NATO's weapons as regards their tactical and technical characteristics.

The qualitative and quantitative arms race, even if parity is preserved, brings down the level of security in Europe. But it also has an economic aspect to it. According to the Palme Commission, annual spending on conventional weapons is 5-6 times greater than on nuclear arms. The development and mass production of new conventional weapons places a heavy burden on the economies of all European countries, including neutral ones.

Pave the Way for Détente

The U.S.S.R. and its allies are continuing their persistent search for new approaches. They are coming up with new initiatives that make mutually acceptable agreements possible and pave the way for the reduction of arms and armed forces in Europe and the world.

The joint Budapest proposals, essentially supplementing the programme to liquidate nuclear and other weapons of mass destruction, are of exceptional significance. They provide for a 25 per cent cut in the armed forces of both sides in the early 1990s (over a million men) and, as an initial step to show good will, cuts of between 100,000 and 150,000 men by the Warsaw Treaty and NATO forces within one or two years. All the reductions are to be carried out under reliable and effective control with the use of national technical facilities and international procedures, including on-site inspection. These proposals overturn suggestions that nuclear disarmament in Europe, given existing levels of conventional forces, would put the West European countries at a disadvantage and that the Soviet Union allegedly opposes effective verification of compliance with agreements. In fact, the U.S.S.R. is even more interested than other states in strict verification of agreements, although it has always opposed verification without agreements.

Of particular significance is the document adopted at the Stockholm Conference on Confidence- and Security-Building Measures and Disarmament in Europe. The agreement is a package of political and military measures that reduce the danger of war in Europe. Its great significance also lies in the fact that it proves that agreements can be reached if there is political will and commitment on the part of the negotiators.

In his TV address on October 14 Mikhail Gorbachev said: "Europe deserves to be freed from nuclear weapons and cease to be a nuclear hostage." It is necessary to pave the way for détente in Europe, and to free the European peoples of the fear of a nuclear catastrophe. Relevant proposals have been submitted for negotiations. However, these historic agreements failed to be implemented because of the U.S. stand. This again highlighted the U.S. Administration's neglect of the vital interests of its European allies. The Americans hope that SDI will bring them to the latest ("third-generation") nuclear weapons, as well as conventional arms. But this would inaugurate a new phase in the arms race, with dire consequences.

The modern world is too small and fragile not only for nuclear, but also for conventional wars. To eliminate war, to reduce confrontation by deep cuts in the levels of armed forces and armaments, bringing them to a level of reasonable sufficiency—this is a task that is crucial for the future of Europe and the world, the whole of civilization.

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A third reactor added to atomic power plant in Southern Moravia

Safety Margin

A third reactor has been commissioned at an atomic power plant in Southern Moravia.

Representatives of the International Atomic Energy Agency sign a protocol to certify that the reactor at the Dukovany plant is ready for operation. An IAEA TV camera installed in the main room monitors the reactor. A switch clicks and hundreds of signal lights flash on. The switchboard operators take the readings from display screens and register the signals.

This is the third VVER-440-type nuclear reactor to be installed at the Dukovany plant and the seventh such reactor in Czechoslovakia. The fourth reactor is scheduled to be operational in several months' time. Next in line are the nuclear power plants in Mochovce (four 440-megawatt reactors) and Temelin (four 1,000-megawatt reactors). By the year 2000 half of the country's electric energy will be generated by nuclear power plants.

The launching of the Dukovany reactor has attracted special attention, as it is the first nuclear reactor to be put into operation since the Chernobyl accident.

Bohumil Vincenc, director of the Dukovany nuclear power plant, has this to say:

"To improve the well-being of society by one per cent the generation of electric energy has to rise by at least 0.5 per cent. But how is this to be done in Czechoslovakia, where natural energy resources have been virtually exhausted? Experts estimate that if coal continues to be used at the present rate, it will have run out by the time of our grandchildren's day. Where is the energy to come from? The most promising source is controlled thermonuclear synthesis. Research in this area is being conducted in many countries. Meanwhile, the best we have is the nuclear energy produced at nuclear power plants. The two reactors at the Dukovany plant alone have saved 9 million tons of brown coal.

"Nuclear power plant safety," Vincenc went on, "is on the whole ensured by the shielding systems now in use. It is all a matter of discipline, strict compliance with regulations and organization and efficiency of staff, all of which should, under all circumstances, guarantee strict adherence to the plant's operational regime. We regard this as a high priority."

In Czechoslovakia personnel for power plants are trained on a thorough basis. Simulators to act out various scenarios of the behaviour of the reactor and the monitoring and safety systems have been built. Trainees learn to deal with any extreme situation. After graduation, a specialist selected to work at a nuclear power plant in Czechoslovakia does a 3-year training course on a simulator. He has to pass 60 tests before he is allowed to work on a real reactor.

"Of course we have learnt lessons from Chernobyl," says Bohumil Vincenc. "We have thoroughly checked out all the factors that guarantee the safe operation of all power plant systems. The protection and diagnostic systems recording deviations from the norm are constantly monitored by control systems with multiple backup."

For Yuri Malkov, who heads the Soviet team at the station, nuclear energy is his vocation. He built atomic power stations in his own country and the G.D.R. before coming to Czechoslovakia.

"Could an operator or any other member of the nuclear power plant's staff cause an accident at the station?"

"Out of the question," replies Malkov. "Computers monitor all the power plant systems and control the safety devices. If the safety devices are damaged or switched off the reactor is automatically stopped."

"Are you suggesting that atomic power stations have a failsafe protection system? What about the Chernobyl accident, then?"

"The whole operation of nuclear power stations is geared to safety. If the rules are ignored there may be a breach in the safety system, but the cause would be human irresponsibility."

The Dukovany station has been designed with a huge safety margin. It can withstand earthquakes, hurricanes, and storms. Even such an unlikely event as a plane crashing into it has been provided for. This safety margin is guaranteed to last at least 31 years, one year longer than the atomic power plant is intended to operate for. Of course, the station costs a great deal. But all expenses are recouped within several years and the plant returns a net profit.

Asked about the power plant's performance so far, the managers provided the following information. The first reactor generated almost 2.5 billion kilowatt-hours of electric energy during the past year. The second reactor, which was plugged into the power grid last March, has already generated 2.3 billion kilowatt-hours and now the third reactor has been commissioned. The fourth reactor will be operational in July.

"Contrary to various rumours, the nuclear power plant construction programme in Czechoslovakia has not been cancelled," says Stanislav Havel, chairman of the Czechoslovak Atomic Energy Commission. "Moreover, we have decided to upgrade our cooperation in this field. I have just come back from a new site in Kecerovce where another nuclear power plant is to be built. By the end of the year we shall have determined the site for the construction of the next power plant. I want to stress that all the increase in the generation of electric energy in Czechoslovakia will be achieved from now on thanks to nuclear power plants. No new thermal electric stations will be built."

V. RZHEVSKY
TASS correspondent,
exclusive for New Times

Prague

At its Bucharest session CMEA adopted a programme for the building of nuclear power and heating stations up to the year 2000. By the start of the next millennium the total capacity of nuclear power plants in the CMEA countries, excluding the U.S.S.R., is to reach 50 million kilowatts, as against 8 million today. Nuclear power plants will account for 30-40 per cent of the total amount of energy generated.

Behind the Scenes of a Permanent Aggression

AFTER SAMORA MACHEL'S DEATH ● PRETORIA-PAID BANDITS ● THE THREAT OF NEOGLOBALISM ● FRELIMO CARRIES ON

Since the tragic death of President Samora Machel on October 19, 1986, developments in the People's Republic of Mozambique have been receiving extensive coverage from the world press. President Machel, who was chairman of FRELIMO (the Mozambique Liberation Front party), was returning by air from Lusaka, the capital of Zambia, where he had taken part in a summit meeting of the African frontline states opposed to racialist South Africa. His plane crashed on the border between Mozambique and South Africa coming down on the territory controlled by Pretoria.

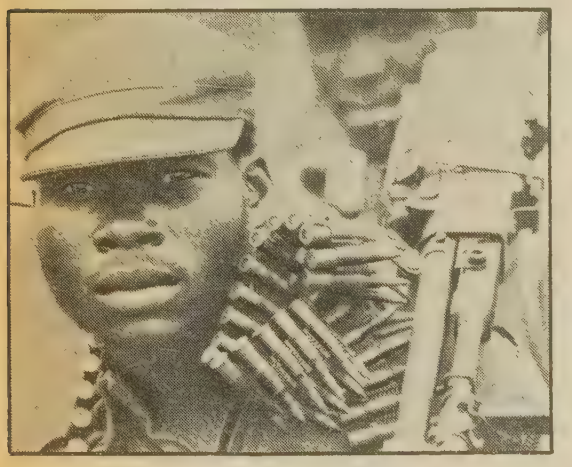
Possible causes of the accident have been put forward in quick succession. Pretoria is doing its utmost to have us believe at one moment that the plane was faulty; then that it had run out of fuel, and, finally, that the crash was due to human error on the part of the crew. Meanwhile, the contents of the plane's "black boxes" have not been revealed.

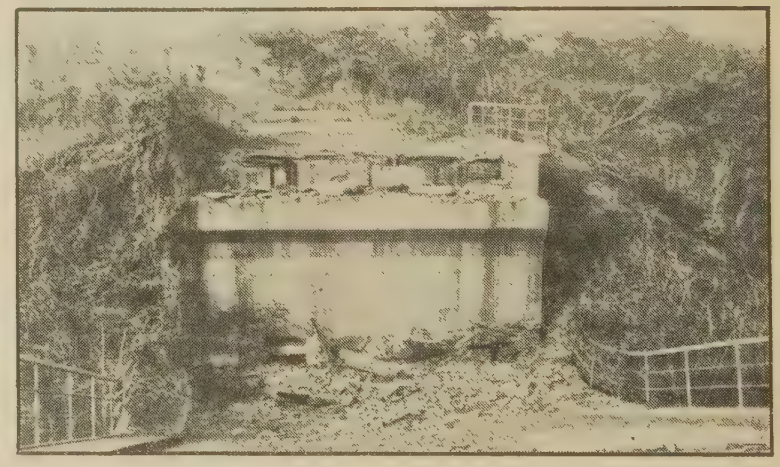
The survivors of the crash, and experts familiar with techniques used by Western special services (including the South African racists), are of the opinion that Samora Machel was the victim of a plot contrived by the enemies of the people of Mozambique, especially Pretoria. South African special services had already tried to "eliminate" Samora Machel, by poisoning him. On that occasion the attempt failed, but immediately before the crash that took the life of Mozambique's national hero, Pretoria had launched a malicious campaign of intimidation against him. Today all the independent African states unanimously hold Pretoria responsible for Samora Machel's death. Pretoria denies having had anything to do with it, but makes no pretence of regret at the tragic fate of a man who was clearly a thorn in its side. Moreover, a lively discussion of the "possibilities" the Mozambican leader's death has opened up for South Africa is in progress, while many U.S. papers are treating the accident from the angle of the While House's interests and U.S. policy objectives on the African continent, and the bourgeois mass media are taking the opportunity to give publicity to the so-called Mozambique National Resistance (MNR)—an anti-popular organization made up of Pretoria's stooges and agents.

The Western media took up and widely publicized a statement by Paulo Oliveira, the MNR's "representative in Europe," smearing and threatening FRELIMO and its leaders and boasting of imaginary MNR "victories" in Mozambique.

The Western media have now turned the spotlight on Afonso Dhlakama, "MNR chairman and commander-in-chief" who has got the upper hand in the struggle for power over Evo Fernandes, "MNR secretary-general." Word has come that the notorious arch-reactionary Heritage Foundation, which has close links with the Administration, has invited an MNR representative to Washington "for consultations," and that two groups of lobbyists are vying for the right to represent the MNR's interests in the United States. It has also transpired that Pentagon chief Caspar Weinberger and CIA chief William Casey are demanding greater aid for the "MNR freedom fighters" and all-round support of the kind Washington gives UNITA's Jonas Savimbi in his bloody war against the Angolan people.

The parallel Washington "lobbyists"





This man of the Mozambique People's Army took part in the fighting to oust MNR bandits; the blown-up bridge is their handiwork.

AIM-TASS photos

are drawing between UNITA and the MNR is quite legitimate. Like UNITA in Angola, the MNR stops at nothing in its drive for power. Both rely on terror and violence, destabilization and economic dislocation. A member of the Mozambican government has testified that since the formation of the People's Republic of Mozambique in 1975, the hostile activities of South Africa and the MNR have cost the republic over four billion dollars and more than 100,000 human lives. Afonso Dhlakama and his bands terrorize vast regions of Mozambique with the result that almost a quarter of the republic's population is threatened with famine.

Shortly before Samora Machel's death, Pretoria performed an act of economic sabotage against Mozambique by ordering the expulsion at short notice of several thousand Mozambican miners who were working under contracts in South Africa and accounted for almost a third of their country's hard currency earnings—nearly 50 million dollars a year. This measure is to be seen in the context of the undeclared war Pretoria has been waging against the People's Republic of Mozambique since it won independence. In March 1984, it is true, South Africa signed the so-called Nkomati Peace Pact with Mozambique on non-interference in each other's internal affairs—only to disregard it completely. Late last September, Sergio Vieira, Mozambique's Minister for Security, said: "South African forces have built airstrips on Mozambican territory and sent in all kinds of aircraft to supply the bandits." To quote the Sunday Times, "the department of military intelligence [of South Africa.—E.K.] has regarded Renamo [the MNR] as the crucial eastern flank of South Africa's destabilization strategy. It matched Jonas Savimbi's UNITA forces in Angola to the West, forming a pincers of South African influence round the 'enemy,' Zimbabwe and Zambia, cutting both off from the sea." Last August, when the joint armed forces of Mozambique and Zimbabwe seized the MNR's base in Gorongosa, diaries of a bandit chieftain and other important documents exposing Pretoria as a source of arms, funds and political support for the notorious "freedom fighters" were captured.

Today Pretoria expects Samora Machel's tragic death to cause political chaos in Mozambique. Hopes for changes in direction in Mozambique's home and foreign policies are being expressed. The Washington Post regards the death of Samora Machel as a "good chance" and calls on President Reagan to bring strong all-out pressure to bear on Mozambique, political threats and economic blackmail included. "If the FRELIMO regime ignores Mr Reagan's overtures," the paper suggests, "he should consider, under the terms of the Reagan doctrine of aid to freedom fighters, providing direct military assistance to the insurgents." The reference is to the notorious doctrine of neoglobalism.

After Samora Machel's death, however, events in Mozambique have not taken the course Pretoria and Washington would have liked. At its extraordinary plenary meeting in Maputo on November 3, the Central Committee of FRELIMO elected Joaquim Alberto Chissano Chairman of the FRELIMO party. Under the Constitution, Joaquim Chissano has likewise become President of the People's Republic of Mozambique and Commander-in-Chief of its armed forces. The plenary meeting unanimously elected him, thus dashing Washington's and Pretoria's hopes for a power struggle and a political split amongst the Mozambican patriots.

Joaquim Alberto Chissano said that Samora Machel had fallen in the fight against apartheid and for peace and justice. The new leader of Mozambique stressed the complexity of the situation in which the extraordinary plenary meeting was held: the enemies of the revolution had launched an intimidatory campaign against People's Mozambique. He pointed out that the eradication of armed banditry remained the most urgent priority of the Mozambican people today. It is necessary to mobilize all the country's manpower and material resources to preserve the achievements of the revolution and move towards socialism. Mozambique must actively counter its enemy's encroachments on its sovereignty, territorial integrity and freedom.

Evgeny KORSHUNOV

PEOPLE ON THE WORLD SCENE

JOAQUIM ALBERTO CHISSANO

Joaquim Alberto Chissano, unanimously elected Chairman of the FRELIMO party at the November 3 extraordinary plenary meeting of its Central Committee, and, under the country's Constitution, vested with the powers of President of the People's Republic of Mozambique and Commander-in-Chief of the Mozambique liberation forces, was born on October 22, 1939, in Chibuto district, Gaza Province (southern Mozambique), into the family of a colonial administration official. Having graduated from a lyceum in Lourenço Marques (now Maputo) he went to study in Portugal in 1960. He gained prominence as an organizer of the National Union of Mozambican Students. Facing arrest for his political activities, he left for France in 1961 and joined the movement for the national liberation of Mozambique there.

Joaquim Chissano, a member of FRELIMO (Mozambique Liberation Front) since its inception in 1962, was admitted to its Central Committee and Executive Committee in 1963. He was one of the organizers and leaders of the Mozambican people's armed struggle against Portuguese colonial oppression. In 1969 Joaquim Chissano was elected a member of FRELIMO's political and military committee. He headed the front's mission in Dar es Salaam, East Africa, for some years.

After the end of the colonial war in Mozambique, Joaquim Chissano became Prime Minister of the transitional government of Mozambique in September 1974. Since the proclamation of independence and the formation of the People's Republic of Mozambique on June 25, 1975, and until recently, Joaquim Chissano held the post of Minister for Foreign Affairs.

In February 1977, when the Liberation Front was transformed into the FRELIMO party at the Third Congress, Joaquim Chissano became a member of the Political Bureau and Secretary of the Party Central Committee.

Major General Chissano paid several visits to the Soviet Union. He led a party and government delegation from Mozambique in November 1985 and attended the 27th CPSU Congress as head of the FRELIMO delegation.

In his recent statement, Joaquim Chissano reaffirmed Mozambique's commitment to the cause of building socialism. He indicated that the republic would take an active part in the activities of the "frontline" states, promote relations with socialist countries and with all interested states.

Has the Lion Woken Up?

Britain appears to be rattling the sabre. In one week it ruptured diplomatic relations with Syria, and then announced a 150-mile "exclusion" zone around the Falkland (Malvinas) Islands.

One might think that "Britannia rules the waves," as she did a hundred years ago. Or that the British lion, which seemed so decrepit, had taken a doze of the elixir of youth and roared and unsheathed its claws.

Could this fit of pugnacity indeed be due to an infusion of fresh energy? Could Britain be on the threshold of an economic boom with at least some of its nearly four million unemployed once again securing jobs? Or has oil gushed from under the North Sea with the promise of a new Eldorado?

Nothing of the sort seems to be happening. So whence this bullying? Could the upsets be responsible?

With an Eye to the General Election

The TUC, the British Trades Union Congress, held its annual conference in September-October. The conferences of the opposition Liberal, Social Democrat and Labour parties followed at brief intervals. Finally came the conference of the ruling Conservative Party. This year these events were all of special significance in view of the fact that a general election may be round the corner even though there is still another 18 months to go till the present government's five-year term expires. However, the government may call an election earlier, at what it considers the most opportune moment—for such are the wonderful workings of the world's oldest bourgeois democracy.

Yet neither economic performance nor political sentiment warrant complacency, as far as the Tory leadership is concerned. Resentment at Margaret Thatcher's policy is mounting even within her own party. Such prominent Tories as Lord Stockton (former Prime Minister Harold Macmillan), Edward Heath (another former Prime Minister), Francis Pym (former Foreign Secretary) and Michael Heseltine (former Defence Secretary) openly disagree with various aspects of the government's activities.

Their main worry is the danger of rising unemployment. But that is not all. London's blatant kowtowing to Washington also arouses resentment, albeit curbed by party discipline. Margaret Thatcher's muted criticism of the U.S. intervention in Grenada fooled few, as it was palpably designed to pacify the Commonwealth nations.

The basic policy is proclaimed without any beating about the bush. The British government is pro-American, Margaret Thatcher has stated time and again over the past few years. What Tory leaders would have thought indecent to say so openly before is now fervently declared.

However, to judge from public opinion polls, most people in Britain are not particularly pro-American. They are primarily concerned with the fate of their own country. They see increasing confirmation of the old axiom that not everything that is good for the U.S. is necessarily good for Britain. There is mounting support for the intention declared at the Labour Party conference to have U.S. nuclear weapons withdrawn. (Many, though not, it is true, the majority, advocate the abolition of all U.S. military bases in Britain.) A growing number advocate renunciation of Britain's own nuclear arsenal.

However, not all opposition parties see eye to eye on these matters. Liberal leader David Steel and his electoral partner, Social Democratic leader David Owen, wish to preserve Britain's nuclear armoury, at any rate until an international agreement on nuclear weapons reduction is signed. However, in defiance of the leadership, most delegates to the Liberal Party conference came out against the modernization and buildup of the British nuclear force.

As for Tory socio-economic policies, the opposition parties rejected them out of hand. There need be no doubt that the spirit of unity, which unlike in previous years prevailed at both the TUC and the Labour Party conferences, has put the Conservatives on the alert.

That attempts are already being made to work out various possible post-election combinations is symptomatic. It is said that there may be a hung Parliament, in which no single party will have a clear majority, which means it will need to form a coalition. Some members of the Liberal-Social Democratic alliance are already offering their services to the Conservatives, but only provided Margaret Thatcher is dropped.

Such is the political background to the above-mentioned events.

Fall-Guy Found

So what was really responsible for the anti-Syrian demarche? London's noble wrath, it is explained, was kindled by alleged Syrian complicity in the attempt to blow up an Israeli plane at Heathrow Airport. Of course, such things can only arouse indignation.

Yet many of the attending circumstances appear obscure. The "evidence" that Britain offered its Common Market partners in the hope of coercing them into implementing "sanctions" against Syria at once raised serious doubts. Only after exerting desperate pressure London secured from them a manifestly grudgingly given expression of "solidarity," while Greece found the arguments of British officialdom inconclusive.

It is not, however, only a matter of the substance (or rather the insubstantiality) of the evidence. Britain's revulsion at terrorism is two-faced. In this connection the Financial Times, which can hardly be suspected of sympathy for the terrorists, issued the reminder that Britain had done virtually nothing when Israel invaded Lebanon in 1982 "despite the many Arab deaths and heavy destruction."

When sentencing the Arab terrorist to a prison term of 45 years for the Heathrow plane bomb attempt, the judge exclaimed: "We will not tolerate the activities of terrorists from other countries operating here or from this country." But why, in that case, is gallant British justice doing nothing to curtail, for instance, the activities of Sikh terrorists in Britain? After all, these are the very terrorists who murdered Indira Gandhi and have plotted more than once to assassinate Rajiv Gandhi. However, the Sikh extremists are treated with indulgent lenience, despite Delhi's repeated appeals to London to take decisive action. Yet, in Britain itself the Sikh separatists are terrorizing other Sikhs who do not sympathize with their objectives. Does this mean there are two types of terrorism? A terrorism that Britain "will not tolerate" and a terrorism which, for some reason, it is prepared to tolerate?

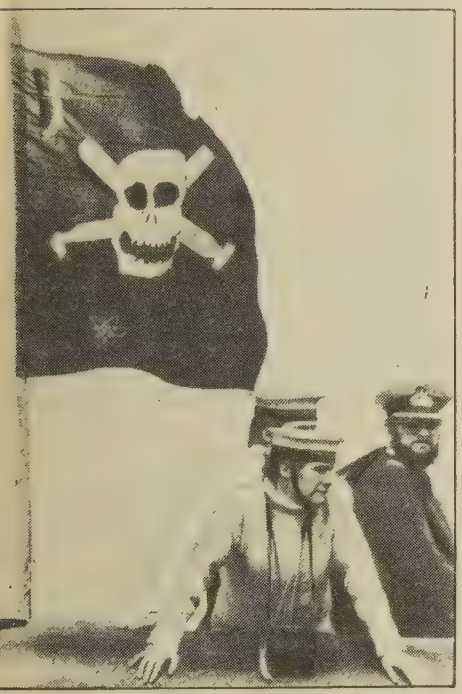
A Relapse?

Over now to the Falklands case. Having declared a 150-mile exclusion zone for fishing, London said it was prepared to defend it by armed force. Official spokesmen say that if necessary the British military presence will be increased.

Why is London again trumpeting the call to arms? Are Argentine warships making for the islands under full steam? Nothing of the sort. What

Britain seems to be worried about is what it sees as the preponderance of trawlers in the South Atlantic. Moreover, Argentina has taken the liberty of signing fishing agreements with the U.S.S.R. and Bulgaria. It is clear how all this directly jeopardizes Britain's security and interests—even though it is barely able to cope with the cod catch in the immediate vicinity.

One does not have to be particularly farsighted to realize that the issue is not really about fish. The problem is that despite U.N. resolutions London is determined to pursue the policy of



This picture was taken during the Falklands campaign, but British submariners still run up the Jolly Roger to celebrate a "victory."
From Der Spiegel (F.R.G.)

"fortress Falklands" and has no intention of negotiating sovereignty with Buenos Aires. There are already about four British tommies for every native Falklands family. A runway capable of taking heavy aircraft has been built. For this the British taxpayer has to pay through the nose more than half a billion pounds sterling annually.

Yet many influential politicians in London maintain that Britain cannot afford this. They also say that it is militarily senseless. They recall that in the 1950s the British General Staff proposed abandoning claims to the islands. It is amusing to learn that when the question came before the Cabinet in 1954 and the First Sea Lord was asked to indicate where these islands of such great importance for Britain were located, he pencilled an area some 10,000 miles away, though admittedly in the same Atlantic Ocean. Since then the Sea Lords have acquired much more geographical expertise along with a far greater understanding of the strategic importance of the islands, obviously with the assistance of the Pentagon. What Britain cannot do off its own bat is much easier to do by invoking the special Anglo-American relationship. Relevant experience was acquired during the 1982 Falklands campaign, when, on Caspar Weinberger's personal instructions, and with President Ronald Reagan's knowledge, the British naval task force was systematically furnished with American satellite intelligence, the Royal Navy with American fuel, and the Pentagon kept an aircraft carrier on standby to make available if needed.

The zone that London has established today is reminiscent of the "military exclusion zone" declared around the Falklands four years ago. At that time the stalwart British admirals sank the Argentine cruiser the General Belgrano with 368 seamen aboard, though it had already left the "zone." For this there were political, not military, considerations, as it effectively torpedoed attempts to negotiate a peaceful settlement and, into the bargain, made it possible to exploit a brilliant naval victory to kindle jingoistic sentiment.

To what end? Because a general election was in the offing. Analysts were almost unanimous in noting that Margaret Thatcher won a landslide in June 1983 thanks to jingoistic fervour. (Of course, the split in the Labour Party undoubtedly contributed.) Has London now got similar ideas in mind? Apparently the Tory leaders wish to strut before the public as uncompromising Richard-the-Lion-hearts courageously championing British interests everywhere, in the City, the South Atlantic and the Middle East. How like the good old days.

Yet it is becoming increasingly harder and riskier to do so. There is one more point to be made in this connection. Without the support of the U.S., Britain would never have dared to be so categorical. It is no wonder that only Washington and Tel Aviv applauded London's anti-Syrian measures.

After all, it is logical for Washington to see Britain displaying similar initiative with respect to Syria after the aggressive anti-Libyan campaign undertaken by the U.S. on the pretext of combating terrorism. "Syria," as the Financial Times observed, "is the one remaining frontline Arab state which Israel still has reason to fear."

But is this really logical and sensible for Britain itself? We have just seen the 30th anniversary of the fiasco of the Suez gamble, in which London collaborated with Israel and France against Egypt. It would seem hard to imagine a more edifying historical lesson. Yet today the British government is trying to knock Syria "out of the game." Only recently one might have had the impression that in the Middle East London sought to act as a mediator maintaining well-balanced relations with all parties to the conflict. But it is clear that Atlanticist commitments have again outweighed national interests. Britain will never isolate Syria, while it has every chance of "knocking itself" out of the game in the Middle East.

The picture with regard to the Falklands is rather similar. Why is Britain charging full steam ahead, disdainfully dismissing the protests of Argentina and other Latin American countries? Why is it throwing down the guantlet to the entire world community; after all, only recently the U.N. General Assembly proclaimed the South Atlantic a "zone of peace and cooperation"?

The point is that Washington and President Reagan himself—as he said in 1980—entertain long-cherished hopes of creating in the South Atlantic a likeness of NATO and thereby keeping the peoples of both South America and southern Africa in its sights.

The Cap That Fits

There was a time when the Tories tried hard to impress upon the British that their party was the champion not of one narrow class, but of the interests of most Britons. They are not getting far with that today, hence the frantic attempts to save face.

This past October's Conservative Party conference had as its motto: "The next step forward." But before taking that step they ought to see whether the ground ahead is firm underfoot.

In the course of both the 1970s and the 1980s many influential British politicians said that Britain should "wear the cap that fits," believing it essential to tailor foreign policy ambitions to realistic proportions. But it seems they are clearly unable to find the right size.

Nobody is seeking to infringe upon Britain's status as a great power with international interests. But in this present day and age, during which many obsolete foreign policy dicta should be discarded, international prestige will not be acquired by the methods London now employs. Neither the measures against Syria, nor the Falklands action will yield dividends, nor will its utterly unconstructive attitude towards nuclear disarmament. Another possible explanation of London's bad case of nerves is that the British government simply cannot think up a serious answer to the latest Soviet peace proposals.

In any case, it is not the lion's roar (which, moreover, has not come at the most opportune of times), but a rational contribution to the settlement of acute international issues that can serve to repair Britain's prestige and influence in world affairs.

Alexander LEBEDEV

The debate about the public sector has been resumed in India. Some ask if it should exist at all; others, what it should be like

At the Commanding Height

"A developed developing country"—this seemingly paradoxical definition is being applied increasingly to India in world economic reviews published by international organizations.

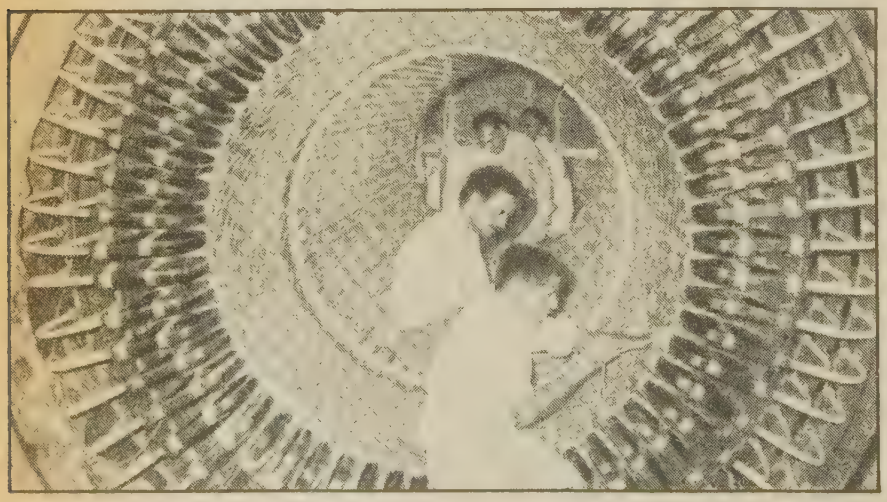
Gurnam Saran, acting director of Bharat Heavy Electricals Ltd., one of the biggest enterprises in India's public sector, helped me understand this paradox. The plant is in Hardwar, a city on the Ganges some 200 kilometres to the northeast of Delhi. I had gone there to attend the ceremony marking the completion of the assembly and commencement of trials of a 500-megawatt turbogenerator. The successful trials of this giant unit by the plant in Hardwar, built with the U.S.S.R.'s economic and technical assistance, placed India among the dozen countries in the world capable of manufacturing such equipment.

The trend towards manufacturing powerful and superpowerful units has been gaining in world power engineering in recent years, Gurnam Saran told me. Such units are more economical, profitable and optimal in operation. Sensing this trend, 18 months ago the Indian government set before the management of the plant in Hardwar the objective of creating a unit of increased capacity. Prior to that, the plant manufactured turbogenerators of the order of 200 megawatts. This assignment also had a political context, the director went on. Had the plant's specialists retreated, had they said that it would be impossible to implement this project without the help of Western experts, this would have played into the hands of those elements in Indian society who accuse the public sector of not being viable. "The eighteen months of hard work," Gurnam Saran went on, "produced a result which gives us both moral and, if I may say so, social satisfaction: the country can confidently rely on the public sector despite all its shortcomings."

"What shortcomings?" the director asked, taking up my question. "Take our plant," he went on. "The design capacity of the production shop for the manufacture of thermal turbogenerators is 3,500 megawatts a year, but it falls short of this target by more that 800 megawatts. The situation with the production of hydroturbines is even worse, with production capacities being used only to 25 per cent. Hence the low profits."

Assembly of India's first domestically designed and manufactured 500-MW turbogenerator.

From Patriot (India)



The troubles of Hardwar and other state-owned enterprises bring grist to the mill of those who are trying to use the present debate in the country on the problems of the public sector in order to pass something like a vote of no confidence on this backbone of the Indian economy.

Debates or Attacks?

The pretext for the debate came as a surprise to many. Unlike numerous occasions in the past, it was started not by the bourgeois opposition, nor by representatives of private business. This time the signal was given by a prominent member of the government, Minister of Energy Vasant P. Sathe. In a series of articles in the Times of India, the minister subjected the public sector to bitter criticism for the low productivity of many of its enterprises, their losses, unsatisfactory management and excessive red tape. He declared that the public sector should no longer be treated like a sacred cow. But neither did he call for it to be sent to the slaughterhouse.

Vasant Sathe's articles initiated stormy debates in India. The ideologues of private business rubbed their hands: the government itself was admitting the non-viability of the public sector. The democratic public and other representatives of the government rallied to its defence, while not denying the shortcomings and deficiencies in its performance. After all, the consensus is that it is to the public sector of its economy that India owes its economic progress, its place amongst the top ten countries in the world for volume of industrial output. This collision of views took place against the background of speculation: was Vasant Sathe expressing only his own view or did his articles reflect a process of re-evaluation taking place in government circles?

The conjectures were ended by Prime Minister Rajiv Gandhi. In an interview with the democratic weekly Blitz, the head of government said that Vasant Sathe's articles should be viewed as a part of the present dialogue in the ruling Indian National Congress (I) party. This dialogue is designed to keep the party viable and its ideas fresh and credible. "Much of what Vasant Sathe has said," the Prime Minister noted, "is what I myself have been saying—namely, that an inefficient public sector is a drain on public resources and ultimately results in depriving the poor." On the other hand, Rajiv Gandhi said, neither the country's progress nor social justice would have been possible without the public sector. That

is why, he stressed, "the public sector will continue to play the crucial vital role it has played so far."

So an explanation was given at the highest level: the public sector will continue to hold the "command heights" in the Indian economy but its performance should be drastically adjusted and perfected.

It follows from conversations with Indian economists that the low profit rate of many state-owned enterprises is one of the most alarming problems. But this shortcoming is not due to innate causes, as is contended by the political representatives of private business. Class bias prevents them admitting that the public sector often bears the brunt of problems which the private sector does not want to help resolve. Thus, a thorough analysis of statistics shows that half of the loss-making state-owned enterprises were former "market economy" enterprises whose owners had failed to extract maximum profits and for this reason simply closed them down. The other half belong to those industries in which private capital refuses to invest because it is known in advance that no profits can be made even though the output of these industries is vitally needed by the country.

Losses Consciously Incurred by the State

On taking upon itself the solution of problems in which the private sector had chosen not to be involved, the Indian state at times consciously accepted losses. There are at least four reasons for which the public sector failed from the start to make sufficient profits, and investments could not be expected to produce an adequate return.

Firstly, money was invested in the extraction of key natural resources, that is, those fundamental riches of the country that should not be allowed to be in private ownership. This sphere rarely produces swift commercial dividends.

Secondly, the state invested in the development of the infrastructure which also cannot be left in private hands. This applies first of all to the power industry and to the railway network which, incidentally, is second only to that of the Soviet Union. In these branches it is not always in the state's power to ensure satisfactory rates of profit.

Thirdly, the government allocated resources for the development of such basic industries as metallurgy and machine building which were designed to give the Indian state the chance to rely on its own potential. Had private capital been given access to this sphere it would have sought only its own gain which does not at all coincide with the country's aims of achieving self-sufficiency.

Fourthly, when siting state-owned enterprises, the government often proceeded not so much from economic as from social considerations. Enterprises were built in localities where private capital could not be forced to invest: in backward areas, sometimes comparatively far from sources of raw materials and energy. But industry was followed to those areas by roads, electricity, housing and, most importantly, jobs for the local population which had previously had bleak prospects of employment.

The opinion expressed by Vasant Sathe that state-owned enterprises are overstaffed is also being debated in the course of the present discussion. This problem is largely connected with the key social designation of the public sector in the conditions prevailing in India—to provide jobs to millions of Indians, something that private enterprise is not doing. Unemployment creates serious pressure in the country and it is the state that opens the valves to let off steam. In the steel industry, for instance, building workers were not dismissed upon the completion of construction projects but given jobs at the new enterprises. In terms of statistics this brings down the indicators of labour productivity. But on the other hand, people were not jettisoned and were provided with a guaranteed means of livelihood.

Campaigning for Readjustment

It is the social aspect of the public sector's activity and its national importance that prompt millions of Indians to demand that it should retain the "command heights" in the country's economy of which the first Prime Minister of independent India, Jawaharlal Nehru, dreamed. A conference held by trade unions of employees at state-owned enterprises in Delhi late in October made a very significant contribution to the present debate. The more than a thousand delegates resolutely rejected the idea suggested from some quarters that unprofitable state-owned enterprises be handed over to the private sector.

"Saving the public sector means saving our entire national economy," New Times was told in an interview with M. K. Padhe, Secretary of the All-India Trade Union Congress.

What ways are seen here of raising the efficiency of enterprises in the public sector?

The Prime Minister, for instance, advocates a more extensive drawing of working people into the management of production. In his opinion this will make them more interested in the quality of output and the enhancement of labour discipline. He also favours giving greater economic independence to state-owned enterprises and freeing them of petty supervision by ministries.

The current restructuring in the Soviet Union is being followed here with interest. L.K. Jha, a prominent expert who, until his recent election to the upper house of Parliament, was the Prime Minister's economic adviser, believes that the experience of the present economic innovations in the U.S.S.R. can be successfully used in India. He also calls on the government to give state-owned enterprises the right to decide on production matters independently, while keeping to the strategic guidelines formulated by ministries. It is persistently rumoured in Delhi that a government commission on adjusting the public sector's performance will be set up in the near future and that L.K. Jha will be appointed to head it.

...Whereas in 1951 there were only about a dozen state-owned enterprises in India, there are some 6,000 of them now.

Using money earned by the public sector, the Gandhi government intends during the 7th five-year-plan period (1985-90) to reduce to 23 per cent the number of Indians living below the poverty line (as against the present 37 per cent).

As Nehru dreamed, the public sector has firmly held the "command heights" in India's economy. Now India is striving to give this concept increasingly tangible material content. And in the term "developed developing country" the accent on the first word will increase in the same measure as the political primacy of the public sector is bolstered by its high economic efficiency.

L. ZHEGALOV
our own correspondent
Hardwar—Delhi

After the recent attempt on the life of Pinochet the wholesale arrests of opponents of the dictatorship were resumed and state of siege introduced once more.

Was there any need for this attempt to assassinate the junta chief if it gave the authorities an excuse to toughen their repressive regime? Did it not play right into the dictator's hands?

Yes, the position of the junta is indeed shaky, but I doubt whether such actions can hasten the end of the tyranny. Remember Russian history. When Alexander II was assassinated Alexander III came to the throne. Did that change anything? The revolution in our country took place only when the social and economic conditions for it had matured.

N. SHESTAKOV
Leningrad Region, U.S.S.R.

POLEMICS

No One Would Mourn...

Comparisons are rarely valid, and this is especially true of historical parallels. But you are quite right, terrorist acts do not bring revolutions any nearer, particularly if, for various objective reasons, a revolutionary situation has not emerged in a country. Let me remind you of what Lenin said on this score in the 90s of last century (by that time more than 15 years had passed since the assassination of Alexander II by Ignaty Grinevitsky of the Narodnaya Volya, and Lenin's elder brother Alexander had already been executed for his part in plotting the assassination of Alexander III). Lenin said that individual terror "is not advisable" and urged the Social Democrats to "concentrate **all its energy** on organization," on mobilizing the masses. And in the final analysis it was in no small measure thanks to the tactics of the Bolsheviks that the October Revolution, as you know, was one of the least bloody of revolutions in history.

I shall not go into the question of whether or not a revolutionary situation exists in Chile at the present time. I would not undertake to predict what would happen in Chile if Pinochet retired from the scene (resigned, emigrated or departed this world); whether there would be a revolution or something else. To define the character of a stage in the social development of one or another country after the event is by no means easy, let alone trying to do so in advance. In the given case I am certain that things could hardly be worse than at present. Changes are inevitable, changes towards democratization. How great these changes will be depends on a host of factors which warrant more thorough examination.

The present regime in Chile is to a considerable extent pivoted on Pinochet, paradoxically enough, on his fear of retribution (leaving aside the problem of the disunity of the opposition). He has gone too far for there to be any return. He has undoubtedly considered the possibility of getting out while the going is good. But where is he to go? What awaits him? The Argentinian brass-hats left voluntarily under compulsion, so to speak, but those whose hands were more bloodstained did not escape trial and imprisonment. Pinochet has before him the fate of the Philippine dictator Marcos who to all intents and purposes is a prisoner on the Hawaiis. Or the fate of Baby Doc who was banished from Haiti and against whom the new authorities have filed a suit in France in the hope of recovering some part of the millions he stole from the Haitians. General Pinochet has repeatedly vowed that he will "die with his boots on," implying that on no account will he follow the example of other dictators and leave the country.

After Pinochet goes it is hardly likely that any member of his entourage would risk taking over the leadership of the regime in its present form. The junta itself (it includes commanders of various arms of the service and the carabinier corps—the gendarmerie) is by no means a monolythic whole. Gustavo Leigh, the then commander-in-chief of the Air Force, who had taken part in the putsch against the Salvador Allende government, deserted as far back as 1978. Pinochet's present "colleagues"—Air Force, Navy and carabinieri commanders—have also been considered "dissidents" having declared in favour of a "dialogue" with the opposition and for the resignation of the "head of state" in 1989 when under the Pinochet "constitution" there should be a referendum to confirm the presidency for the period up to 1997. The dictator has already intimated that the only candidate is himself. But the other members of the junta, according to the American Time magazine, avoid nominating Pinochet as their candidate. Are they perhaps looking for at least a safe place for themselves in the post-Pinochet setup? They are less scared of irreversible changes, since their underlings, primarily the flyers and seamen, were less involved in the mass terror launched after the 1973 upheaval than were the land forces commanded by Pinochet.

As this journal has reported, the responsibility for the assassination attempt of September 7 was claimed by a unit of the Manuel Rodriguez Patriotic Front, an anti-fascist organization which uses armed methods of struggle against the dictatorship. Explaining the motives for the attempt, a spokesman for the Front said they were convinced that if Pinochet were killed the Chilean opposition would have the strength and resolve to establish a democratic government. We are not fighting the President as some politicians claim, the spokesman said. We are fighting a dictator whose activity has been qualified as state terrorism by as authoritative an international body as the United Nations. The Front does not separate its armed struggle from political action.

Was the attempt on Pinochet's life morally justified? Let me refer you

OPINIONS

"I am not an expert in nuclear matters, but I believe in our President," Linda Evans, an American, wrote in a letter to our journal. Below are some comments from other readers.

LET US ATTEND TO OUR OWN AFFAIRS

I realize that Ms Evans' letter can hardly elicit much enthusiasm from the Soviet readers of your journal. But is there not something in what she says? After all, what is the good of all those demonstrations staged by her compatriots who march through the streets carrying anti-war slogans? Who are those slogans addressed to? The government? I don't think the government takes them seriously. Themselves? The general public? In this divided world we live in, where everyone is so preoccupied with his own problems, many people simply do not take the trouble to think about what those who take part in demonstrations and meetings are talking about. Business people have their own troubles. So would it not be better if everyone honestly gave up this fight for peace as it is represented in the socialist press? After all, in the final analysis, in every country there are men whose job it is to answer for national security and who really have the right to choose the foreign policy course their country should steer. Let everyone attend to his own affairs.

Kurt BAYER
Düsseldorf, F.R.G.

THE ONLY WAY

I can understand your American reader's concern for the security of her country. I hope that she will understand me too when I say that I am not indifferent to the fate of the millions of my countrymen. This is quite normal. But here is the question: why does the U.S. government, concerned for its own well-being, violate the security of other countries—Vietnam, Cuba, Nicaragua, for instance, not to speak of Libya. The Americans go on developing new types of arms and we are obliged to match them with our own. Note, please: we are always second in this. How much longer must we go on competing with each other, demonstrating our technical inventiveness! We have been piling up arms for 40 years now. Yet the world has not become a safer place. So suppose we try taking some other course, the course of disarmament and mutual concessions! This alone can ensure us all peace and confidence in the morrow.

Yuri FATENKO
Krivoi Rog, U.S.S.R.

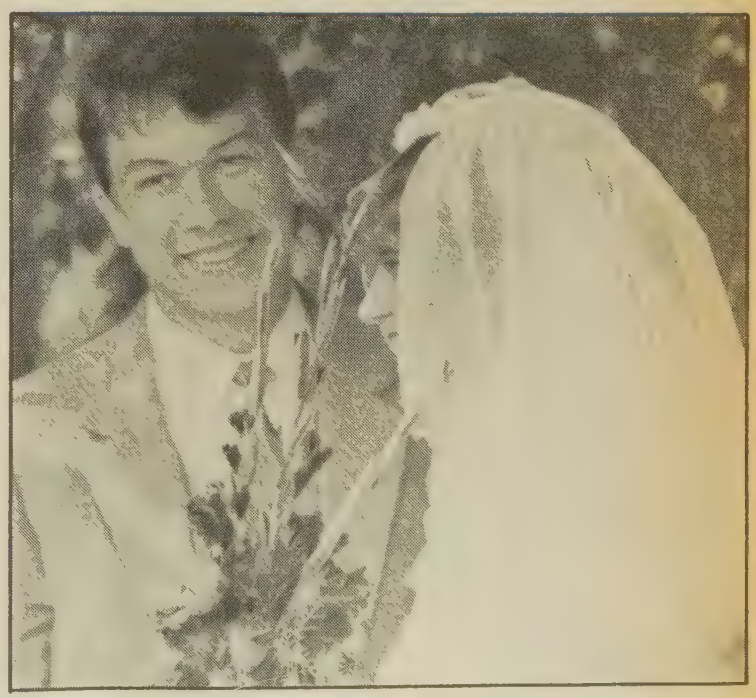
BEWARE OF INDIFFERENCE

As far as I understand, the Soviet Union has no intention of attacking the United States or any other country. This is confirmed by both the Soviet peace initiatives and the nearly 70 years of our dealings with that socialist state. The Russians as a rule keep their word. And so the myth about the Soviet military threat is beamed to the totally ignorant and illiterate. But what is worse still, are the millions who are indifferent; they fall victim to official propaganda and help to implement the ideas and policies of a handful of hawks, of the military-industrial complex.

Indifference is a terrible thing. It is better to have downright enemies than people who are neither "for" nor "against." I don't know if I am right, but it seems to me that it was this attitude that enabled fascism to take over in Germany. One would not want to be blown sky-high because of the indifference of the American man in the street.

Robert DOBBS
Wellington, New Zealand

A READER'S CONTRIBUTION



I took this picture during the Volga cruise on board the Maxim Gorky last August. I liked this young couple very much. I don't know either their names or their address, but perhaps this photo in your journal will remind them of that happy day.

Fernando TARQUINI
Torano Nuovo, Italy

WHAT ARE THEY AFRAID OF?

ALEXANDER PUMPYANSKY

A strange drama is being acted out on the Western political stage. Kissinger, Brzezinski, Jeane Kirkpatrick and Schlesinger are all instructing Reagan. Is it as if they wanted to be more Catholic than the Pope, or are they preaching true Western orthodoxy—boundless faith in the nuclear weapon?

If a legacy is small or nonexistent, is it worth fighting for? The greatest paradox of Reykjavik is that it hasn't left in its wake a single agreement, not one line in the way of a joint statement or polite communiqué. And yet a fierce battle is being fought over its legacy. But what is that legacy? This, too, is a subject of debate.

Some saw "an unexpected prospect of reaching a historic result" (Bettino Craxi). "After Reykjavik I look into the future with greater hope," says the Italian Prime Minister, adding that "the task now is to ensure that there is no backtracking and that the opportunity to sign agreements is not ignored." Others are worried. "The failure of Reykjavik could set the world on a 'slip and slide' course towards a new dimension of the arms race," warned Neil Kinnock, the British Labour Party leader.

Ronald Reagan meanwhile is trying to kill two birds with one stone. The sharp-tongued Mary McGrory of The Washington Post describes his stance as follows: "Sometimes he invites cheers for having brought us 'closer than ever before to agreements that could lead to a safer world without nuclear weapons.' Then again, he seeks a standing ovation for 'just saying no' to the millennium offered at Reykjavik."

To continue the list of paradoxes over Reykjavik, the U.S. President has picked up criticism from a very surprising quarter. He is being criticized—and very bitterly—by the right. This kind of criticism merits closer examination.

"The Soviets Have Skewed the Agenda"

Zbigniew Brzezinski, National Security Adviser to President Carter, is among those who believe that Reykjavik was a mistake on Reagan's part as well as a defeat. Although he entitled his article in the U.S. News and World Report "After Reykjavik: What Reagan Should Do," he does not so much advise as instruct the President point by point.

"The agenda was set—and skewed—by the Soviets," frets Brzezinski. He goes on to support his thesis with the following rationale: "Regional and human-rights issues were largely neglected. The lack of attention may not trouble naive souls who regard nuclear arms as the cause of U.S.-Soviet tensions. But for those who see the nuclear race as largely symptomatic of deeper historical and geopolitical factors, Soviet avoidance of serious discussion on Afghanistan or human rights was a setback for the U.S."

Brzezinski is right when he says that the Reykjavik agenda was based on Soviet proposals. And that was all to the good.

It is a matter of principle. The "difficulties in leaving the U.S.S.R." or "the misfortunes of divided families" and similar issues (emphasized by the West in connection with "human rights"), and even "Afghanistan," cannot be compared in significance with the problem of mankind's survival. It would be wrong to oppose the one to the other, but one must have a sense of proportion. It is a plus, and not a minus for this summit meeting that it saw the two statesmen discuss the most dangerous and important issue and not engage in a propaganda bout, with the winner to be determined by the cheering from the grandstand.

Is the nuclear weapon the cause or the consequence of tensions? And is the nuclear arms race a symptom or the disease? It is salutary that Brzezinski has identified this question.

He proceeds from the assumption that it is not the nuclear weapon that has split the world into opposing socio-economic systems, but the split that has brought about the nuclear arms race. And if so, confrontation is inevitable and will always be with us as long as such widely differing interests exist. This is a typical case of mechanistic logic and a dangerous delusion.

The nuclear age has its own reality and its own imperatives. The East-West confrontation is the result of the world's division and the arms race has been engendered by confrontation. But the present **nuclear** arms race is in essence larger than this confrontation and division, for it has outgrown the world which it is now threatening—not with one death but with many—**megadeath.** The consequence has outgrown the cause and has itself led to a fatal threat.

The nuclear age has not eliminated any of the socio-economic and political contradictions but it has given them a different scale, as it were, by making civilization aware of the one absolute dilemma—that between life and death. It is forcing people to solve their socio-economic and political contradictions by social, economic and political means. It tells people that their historic dispute only has meaning for as long as history continues. To resolve the argument one must put the doomsday weapon aside. There is only one genuinely effective insurance policy for history and society—nuclear disarmament.

Surrealist Scenarios

Right-wing critics raise the alarm at the very suggestion that "a farewell to arms" had seriously been called for in Reykjavik.

The news that Gorbachev proposed Reagan's own "zero option" to Reagan and that the latter could not wriggle out of it caused veritable panic and a great deal of fuss. Brzezinski is demanding that the agreement should be withdrawn. He put it in these words: "In negotiations to come the U.S. should insist that each side retain 200 warheads [instead of 100 as agreed—**A.P.**] with the U.S. quota split evenly between Western Europe and the continental

United States and the Soviet quota between Europe and Asia."

The normally flexible Henry Kissinger is blunt to the point of rudeness in rejecting the so-called zero option, i.e., the dismantling of U.S. Pershing and cruise missiles in exchange for dismantling Soviet SS-20s.

Jeane Kirkpatrick makes these revealing comments on relations between the allies: "Europeans are also worried by the thought of our withdrawing all American missiles from Europe. The French Foreign Minister Jean-Bernard Raimond told the French Parliament that total withdrawal would be 'terrible.' In Washington, German Chancellor Helmut Kohl expressed his concern that withdrawal of U.S. intermediate missiles would leave Germany more vulnerable to short-range weapons."

Even if Jeane Kirkpatrick is touching up some right-wing details these scenarios have a touch of black humour about them.

Something must be wrong with the memory of these West Europeans. Not so long ago the U.S.A.'s junior NATO partners had wryly acquiescent faces as they accepted the American missiles: nothing doing, the diabolical SS-20s demand retaliation. And now the same people are ready to reconcile themselves to Soviet missiles so as not to be deprived of American ones.

The story of the "zero option" has not added lustre to the names of many Western political leaders. Not that the story was exceptional, rather it was a specific case that confirmed the general rule, the rule being nuclear fetishism. Meanwhile, Jeane Kirkpatrick continues to draw her surrealist pictures: "Our closest friends are not ready to abandon nuclear weapons as the centrepiece of NATO defence, are not ready to see all American intermediate missiles withdrawn from Europe, are not ready to forgo their own nuclear deterrence.

"NATO ... strategy has always featured a heavy reliance on nuclear arms to offset Soviet superiority in conventional forces. Neither the accumulation of nuclear weapons, the improvement of their accuracy, the rise of anti-nuclear sentiment in opposition parties, nor the arrival in power of a new Soviet leadership has changed the view of the allied governments."

This obstinacy brings to mind the description once given to the Bourbons: they forgot nothing and learned nothing. It looks more like a farce: they have understood nothing and learned nothing.

The reaction among certain quarters to the principle of a 50 per cent cut in strategic weapons to be followed by their complete elimination agreed in Reykjavik was comparable to the agitation among a crowd of fanatics who have identified a threat to their idol. Let us listen to what the high priests of the nuclear cult say.

Cassandras with an Axe to Grind

Henry Kissinger pontificates to the readers of the French Paris-Match. Let us go on to intercontinental missiles and the proposal to cut them by half, he says, adding that in his opinion the very idea of purely quantitative cuts—by 30 or 50 per cent—makes no sense because it does not reduce the threat of a first strike, in other words, a surprise attack.

This statement certainly intrigued the interviewer. What he heard next was striking: it appears that the fewer the missiles, the more dangerous it is. Why? Because there are fewer targets for the enemy. And cutting the number of submarines by half is even more dangerous because the number of anti-submarine weapons would remain the same thus rendering submarines less effective. Too bad for the submarines.

"What do you have against the Soviet proposal for the complete removal of all ballistic missiles?" the interviewer asked.

"This option could not be considered seriously because it had never been proposed before Reykjavik," Kissinger replied, elaborating along the following lines: if the question arose of which missiles to dismantle and how quickly, we would get bogged down in negotiations that could last years and would probably fail; finally (and most importantly) if all ballistic missiles were eventually to be scrapped, that process would have to involve the French and British missile forces; since these countries have practically no strategic aviation this would mean forcing them to renounce nuclear weapons, and this with the simultaneous pull-out of American missiles from Europe.

A nightmarish vision indeed: a Europe on which nuclear disarmament has been forced.

Henry Kissinger has assumed the unenviable role of collector of problems—real and imagined—gloating over these problems like a miser over his gold. The politician at a loose end is posing as a Cassandra, trying to make capital out of his gloomy predictions. Indeed, one cannot help thinking that a professional without ideals is one of the worst human types produced by contemporary civilization. Ideals he may not have, but you cannot deny him a sharp nose and a sense of direction. For there is a pattern in his trying to jump onto the right-wing bandwagon. Kissinger, once so pragmatic and sober-minded, is out to out-Reagan Reagan.

"I had a frightful nightmare, I dreamt I woke up without you, darling, by my side!"

Cartoon by N. Shcherbakov

Another duke without a duchy, Zbigniew Brzezinski, is making a fuss in his own way. He is not against deep cuts in strategic arsenals (by three quarters) but only such cuts and conducted in such a way as to make the U.S. invulnerable to a crushing Soviet blow. But not a single warhead more: total dismantling of strategic systems or individual missiles is a heresy to be eradicated.

"In the meantime no one should think a historic opportunity was lost at Reykjavik because no such opportunity existed." A veritable oracle. "The American side fell into a negotiating

and public-relations trap." This is the fifth point of Brzezinski's indictment of Reagan over Reykjavik.

"The Soviets not only skewed the formal agenda to arms-control issues" but engaged "the President in a competition of 'non-nuclear' visions of the future," he grumbles. "When the Soviets sprang their specific arms-control proposals on the President, he should have said that he would study them carefully, that the Secretary of State would pursue them and that an additional summit or ministerial meeting could be scheduled for December. That would have defeated the Soviet proposals but pocketed the concessions. Instead, the U.S. took the bait and even hastily cooked up its own visionary proposal for the decade and beyond."

Forgotten is the American rule of "fair play" which does not square with the wish to wrest a concession without giving anything in return. The card-sharper's ethic is clear enough but what is the strategic stake? We ought to be grateful to our opponents that they are quite candid on this score.

Brzezinski: "Our central objective in arms-control negotiations should be mutual strategic security, not nuclear disarmament or an ICBM ban."

Kissinger: "I would tell him [President Reagan—A.P.] that he has to choose between two historical perspectives: to be remembered by posterity as a statesman who managed to take the first steps towards real arms control or to try to be remembered as the man who found the magic formula to put an end to nuclear weapons definitively. I would tell him that this second perspective is dangerous and threatens to put the U.S. and the free world as a whole in a vulnerable position in the future."

To hell with the vision of a nuclear-free world. A world without a bomb? Never.

Perpetuate the Threat to Yourself

There is something morbid in the way the "free world" is clinging to the Bomb, as if it were its salvation. Salvation from what? From a different mode of thinking and acting, another way of life? There is something perverse about the desire to perpetuate the Threat to oneself provided the enemy is also threatened. For in the nuclear age the Threat is one and the same.

We hear that the threat is not the Bomb but the absence of the Bomb, not in trying to cover the Bomb with a burning fuse with one's body but in trying to defuse it. Witness the title of an article by James Schlesinger, former U.S. Defence Secretary, in Time magazine—"The Dangers of a Nuclear-Free World."

"Nuclear arsenals are going to be with us as long as there are sovereign states with conflicting ideologies," he writes. "Unlike Aladdin with his lamp, we have no way to force the nuclear genie back into the bottle. A world without nuclear weapons is a utopian dream."

The Bomb has become a sign of sovereignty. To think what a pass things have come to!

Another former U.S. Secretary of Defence Robert McNamara, though he belongs to a different part of the American spectrum, elaborates the same idea. "An agreement to eliminate all nuclear weapons, given the political and technical realities, could, paradoxically, increase the risk of nuclear war," he claims. In what way? According to McNamara, it's all a matter of "fear of cheating." "Although we might be able to verify the dismantling of Soviet nuclear weapons, we could not cleanse the minds of U.S. and Soviet scientists of the knowledge of how to build them. Warheads might be eliminated, but the potential for recreating them would remain. And in a 'nuclear-free world' a single nuclear weapon, the production and storage of which would be impossible to detect, could alter the military balance. We would live with the fear of waking up one day to find Gorbachev brandishing the world's only nuclear warhead threatening to blackmail us into accepting his political demands."

Ooff!

Inferiority Complex?

Something odd is happening to the Western world. Is its reason failing? Why are its arguments becoming so feeble? Even its fears are becoming somewhat absurd. A serious attempt is being made to justify "star wars" by citing a hypothetical madman against whom it is necessary to insure by building a system costing trillions of dollars. The universal human dream is being blocked by a crazy picture of how Moscow would brandish a single warhead procured from nowhere.

McNamara's fears could be allayed by reminding him that a single bomb does not win a war. This was true even in the past. Hiroshima led to Nagasaki but it was the defeat of the Kwantung Army and the seizure of Berlin, and the great victory of the allied nations over German fascism and Japanese militarism that had caused Emperor Hirohito to capitulate.

The argument about the growing danger of conventional war in a nuclear-free world has not been prompted by reason but by pre-rational response. To imagine that thousands of warheads would be scrapped only to snare the West before the tanks start their engines and charge—this is the logic of schizophrenia. It is challenged, if you like, by McNamara's own argument: the technology of nuclear war would not be erased from memory and the possibility of nuclear weapons coming back direct to the battlefield would provide an insurance. This even if we do not put our faith in the trust that would emerge tomorrow in the process of nuclear disarmament. It is far more natural to assume that nuclear disarmament would give a powerful and irreversible impulse to complete disarmament.

Yet, something must be haunting the Western mind to suggest such lurid visions of a nuclear-free world as McNamara's. What is it? The present rampant terrorism and fear of blackmail? Or perhaps a return to the monstrously perverted former illusions—the illusions of the good old days when America had the monopoly on the Bomb and thought it was dictating its terms to the world—Moscow particularly? Could these rosy dreams of a golden American nuclear age have now begotten nightmares?

And this is happening to the proud West confident of its superiority in every field—consumerism, technology, ideology and arms. It looks as if the loss of military superiority is perceived as the end of the world. The West thinks it has no future without thermonuclear weapons. Are ideas, a way of life and the force of example worth so little that it has to reach for weapons of mass destruction? This is a case of an inferiority complex worth pondering.

Why does this civilization consider mountains of weapons to be normal and disarmament abnormal? Why should nuclear oversaturation of the planet be an acceptable reality while a nuclear-free world, an utopia causing panic and irritation? Why should the best brains of this civilization be vying with each other to invent new arguments to prove "why it is impossible" instead of thinking "how best to accomplish it?"

Of course, it is difficult to get off a powder keg, but sitting on it is dangerous.

The argument about a non-nuclear world is at the heart of all other arguments today. It encompasses the argument about human rights because it is at the same time an argument about the rights of humankind, and it contains an answer to the question of which system is more humane and has a claim to the future.

■

Laser: a Worker, Not a Soldier

Two diametrically opposite aspects of the great discovery

In Dubna, a small town near Moscow known worldwide for its Joint Nuclear Research Institute, an inscription on a house-front reads: "The atom is not a soldier, but a worker." This sums up an aspiration, and to realize it every effort should be made.

The "Atom is a worker" part of the programme has largely been realized. The nuclear power industry is making progress the world over; the accidents that sometimes happen at nuclear power plants are "growing pains" rather than the "other side of the coin." Though agonizing, these pains are curable, especially given close international cooperation, which has a long and useful record in this field.

The "atom is not a soldier" part is, unfortunately, still an objective to be attained—a clear, long-cherished objective which is, as recent developments (especially the Reykjavik summit) have shown, entirely feasible.

But it should be remembered that over twenty nuclear tests have been carried out in Nevada since the Soviet Union's proclamation of a unilateral moratorium on all nuclear blasts. According to press reports, some of the underground explosions on the American test site were intended to optimize X-ray laser pumping systems, lasers being a basic component of "star wars" weapons. One would very much like to see an inscription reading "Laser is not a soldier, but a worker" on a house-front in Livermore, the U.S. city where lasers for the SDI project are being developed.

That would also be a perfectly feasible aspiration as things stand. Because the laser has already become an indispensable attribute of scientific and technological progress, while its military aspect is only now being pioneered.

The Invention of the Century

The laser has a special place among the great inventions and scientific discoveries of the second half of our turbulent century. This is no exaggeration. Productive forces depend heavily on the harnessing of new kinds of energy for their development. Man first learned to produce heat, then convert it into mechanical movement, mechanical movement into electricity, and electricity into radiowave energy. Such are the landmarks on man's way to new kinds of energy. Each offered new technique of concentrating energy and transmitting it over ever greater distances. In other words, man has always sought to improve the quality of energy. Lasers are sources of extremely high-grade energy, concentrated in a light beam. Specifically, low-grade energy such as thermal, chemical or electric, is converted into laser-beam energy (or used for laser pumping, to use a technical term).

What does laser light owe its high quality to? What is it that makes it different from sunlight or electric light? The difference is fundamental. Sunlight, and any "ordinary" light, consists of infinitesimal particles—photons. Their characteristics, such as self-energy, movement direction, polarization and some others, have a wide range (or spectrum) of values. Controlling such light is virtually impossible, and before the advent of lasers the most sophisticated techniques for manipulating sources of light came down to isolating narrow lines (i.e., photons with a limited number of characteristics) from the spectrum and experimenting with them in research laboratories.

In a laser beam all the photons are identical, and this is responsible for the high quality of laser energy. Such a beam is highly directional and can cover enormous distances without dispersing; a laser beam can be controlled by varying the energy levels of all the photons of which it is comprised, depending on the job in hand, the beam can either be maintained at a continuous level, or be emitted in pulses lasting from a few thousandths to a billionth of a second. A laser beam can be focussed into a tiny point a few microns across to obtain a temperature of millions of degrees.

A Thousand Professions

All these properties of laser emission promptly found a wide variety of practical applications. Last year marked the 25th anniversary of the first crude laser—and the record of the industrial use of laser techniques is almost as long. Welding, hardening, cutting, and drilling various materials—all these operations have proved to be within the laser's powers; moreover, lasers perform them with unprecedented precision and efficiency, and have made it possible to work with new superhard and super-brittle materials and to manipulate microscopic components.

The laser beam has found its way into medicine where it is used as a fine surgical instrument for operations on the retina, the heart and the vascular system. Gastric resection, the removal of polyps by means of the laser have become common practice.

The advent of the laser has brought about a revolution in the sphere of information reception and transmission. Ninety-one years ago, Alexander Popov demonstrated the world's first radio receiver, initiating the eventful progress of radio communication which required radiowave sources; i.e., generators of stable electromagnetic oscillations. Priority was given to shortwave bands capable of transmitting the largest amount of information. However, the practical use of the optical band, the most promising in this respect, remained impossible for some time precisely for want of stable single-wave monochromatic light emitters. Lasers have become just such emitters. True, the very first experiments with laser-beam information transmission showed that the atmosphere interferes with the beam's propagation, as the air, dust particles and drops of moisture scatter and absorb it. Presently it turned out, however, that laser signals can travel, almost without loss, along thin glass fibre-optic light guides, whereupon a new era in the development of communication facilities began.

Today the world produces up to a million kilometres of fibre-optic light guides with low optical loss annually. Schemes for a large-scale development of fibre-optic cable television have been worked out in all the industrialized countries. In May 1984 the first fibre-optic television cable was laid to an apartment block on Uralskaya Street, Moscow, located in an area with marginal reception.

Lasers are to play a vital role in data processing and storage, as well as in transmission. An earnest of this is the progress made to date by semiconductor lasers which are already fairly compact, easy to operate, economical and possess highest ever efficiency. Research laboratories are busy develop-

ing temporary and permanent storages and optical integrated microcircuits based on semiconductor lasers. These will result in super-fast computers with lower error-probability factors and higher reliability than those currently in use.

The Most Promising Application

The laser has brought about a revolution in research techniques. It has helped attain a fantastic degree of accuracy of measurement. The laser beam has afforded an insight into the innermost recesses of the structure of matter at atomic and molecular levels. Here are just a few striking examples. Using lasers, scientists at the P.N. Lebedev Physics Institute attached to the U.S.S.R. Academy of Sciences (FIAN) have measured the distance to the moon to within an accuracy of 10 cm; and the distance between McDonald Observatory (Texas, U.S.A.) and the institute's Crimean observatory, to within 70 cm. The laser systems developed at the institute are capable of reliably registering, and permit the study of, infinitesimal quantities of matter—just a few atoms per cubic cm.

The FIAN is recognized the world over as a leader in many spheres of laser study and application. Its top-level experts have generated a host of fundamental ideas, and carried out many pioneer research jobs. Laser thermonuclear fusion is the favourite brainchild of Academician Nikolai Basov, twice Hero of Socialist Labour, Lenin and Nobel prizes winner and director of the FIAN. He regards the achievement of a controlled thermonuclear reaction by means of lasers as the most promising and important sphere of their application. Profound theoretical analysis and a wealth of practical evidence obtained experimentally show that laser beams can compress and heat a small target filled with a mixture of hydrogen isotopes to the point where their nuclei will combine to form helium. The energy released in the process will exceed that of the beams themselves and that expended in emitting them. This will give man access to an inexhaustible source of energy, and an ecologically pure source at that: after all, thermonuclear fusion requires hydrogen found in the waters of the World Ocean.

In a word, the laser is a worker! Put to technical, industrial and research uses, it not only symbolizes scientific and technological progress today but largely sets the pace for this progress. Making full use of the potential the laser offers is still a long way off. For instance, controlled thermonuclear fusion requires a laser with a pulse energy of 10 MJ, i.e., equivalent to the energy imparted to a turbine by 100 cu. m. of water falling from a height of 10 m. The same amount of energy is released by the combustion of 250 grammes of gasoline. But a laser pulse carrying this amount of energy will only last a billionth of a second! Building such a laser involves complex scientific and engineering problems as well as great expense. The development of laser units for controlled thermonuclear fusion costs the United States, for instance, about $100 million a year.

What Targets Can Be Hit from Combat Stations

It would be of interest to match this figure against the cost of SDI lasers. At the estimate of some American papers, each laser-carrying space platform will cost from $5 to $10 billion to build. Experts at Stanford University think SDI will require no less than 320 orbital combat stations.

The cost of orbiting these stations is also astronomical. According to the American expert Richard Garwin, lifting just one kilo of payload by means of a Shuttle costs $3,000. Now the weight of a platform carrying a combat laser is estimated at 100-1,000 tons. Consequently, the orbiting of just one platform weighing 500 tons will cost nearly $1.5 billion.

While these appalling expenses are being planned, many experts voice serious doubts as to the feasibility of the laser "star wars" programme. They take, for instance, the case of a space platform-mounted chemical laser pumped by the energy of hydrogen burning in fluorine. Its beam has to be trained on a newly-launched missile with astronomical accuracy in a matter of seconds. But is this feasible with a turbulent chemical reaction in progress, products of combustion being discharged into space, and the platform vibrating as a result? Hardly. The laser and its sighting device constitute a delicate optical system which, in a laboratory, responds even to an experimenter's footsteps.

Much is being written about X-ray lasers. A combat station fitted with such lasers is conceived as a container holding an atomic bomb of a yield nearly equivalent to those the Americans dropped on Hiroshima and Nagasaki. The explosion of such a bomb is supposed to provide the energy required to pump several X-ray optical laser rods each about two metres long and each aimed at its own target. Such a station will be blasted to radioactive smithereens within an instant of the atomic explosion, but before this happens, X-rays are expected to form in the rods, leave the crumbling station and hit the targets. Even the most competent experts cannot see how such a station will detect and identify the lift-offs of many ballistic missiles (which will hardly be fired simultaneously anyway), how it will determine each missile's trajectory, target the rods separately, and so on.

There are two more questions to be asked in connection with X-ray combat stations. First, how are they to be tested without violating the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water? Both the U.S.S.R. and the U.S.A. have to—and do—observe this important international treaty. On the other hand, the fighting efficiency of this costly unit can be ascertained only by testing it. The second question is: how can the advocates of SDI be expected to observe the nuclear weapon test ban in the light of the statement by Adrian De Wind, chairman of the U.S. Natural Resources Defence Council, to the effect that the development and building of the nuclear-pumped laser alone will take about 200 nuclear tests?

True, the U.S. papers have been trying hard of late to "elucidate" the role of lasers in the SDI programme, specify the cost of their development, discuss the possibility of deploying them on earth as well as in outer space and so on. None of these forced "explanations" hold any water, and assertions by the apologists for SDI that the research effort involved in carrying out this programme will promote technological progress amount to a half-truth, which is worse than downright falsehood. SDI lasers are only suitable for SDI whereas the solution of the problem of controlled thermonuclear fusion calls not only for entirely different approaches and entirely different lasers but also for considerable material and intellectual resources.

In physics the X-ray laser problem has been known to scientists in the Soviet Union, the U.S. and elsewhere for years. X-ray laser emission would afford an insight into atomic nuclei, just as optical lasers have into atoms and molecules. But who needs the laser pumped by an atomic blast? Who needs exquisite but lethal precision?

SDI is fraught with the extremely dangerous prospect of a further acceleration of the arms race. We have not touched here upon the political and military aspects of this "initiative." We have only tried to show that there are two aspects to scientific and technological progress, that it can either promote the advance of civilization or serve as a source of profit for the military-industrial complex, with all the ensuing consequences. Which course will science and technology take? The answer to this and many other pressing contemporary questions rests with all of us who have had the good fortune to be born and to live on this planet.

Alexei ANTIPOV

275th Anniversary of the Birth of Lomonosov

The Pioneer of Russian Science

Professor Igor KOBZAREV

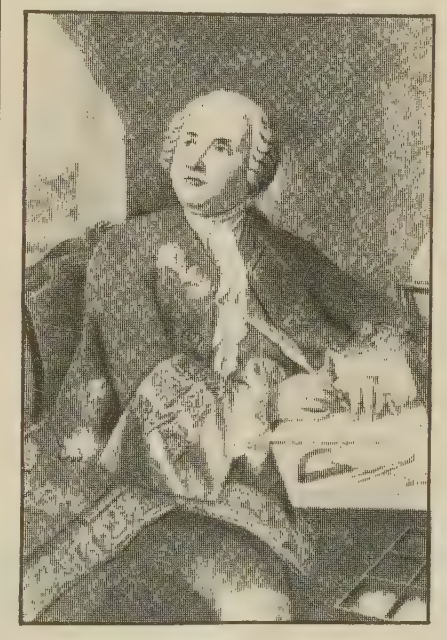
Today the fame of Mikhail Lomonosov has a new relevance. With "disdain for gloomy fate" ships sail across the Arctic Ocean which he called on "Russian Columbuses" to explore. Lomonosov's name has been given to a ridge at the bottom of the Arctic Ocean and to craters on the Moon and Mars.

Ahead of His Time

The full history of Lomonosov's life and the importance of his contribution has yet to be made known. His life and work were studied in the 18th and 19th centuries and are still being studied today. Books and articles about him appear in many European cities—Moscow and Leningrad, Prague and Paris, Berlin and Bucharest—and in the U.S.

In Russia, Lomonosov has always been remembered. To be aware of this it is enough to read the speech delivered in 1855 by Professor Pogodin of Moscow University. He stressed that Lomonosov was "the pioneer of Russian science, a glorious educator, natural scientist, chemist, physicist, geographer, metallurgist, historian, and writer of prose and poetry—a man who alone in the intellectual sphere sustained on his powerful shoulders the reforms of Peter the Great and devoted his life to science." And he went on: "Who would have thought, who could ever have imagined that carrying on Peter's work in the noblest field—transforming our native language and bringing European science to Russia—would fall to a common peasant born in a Russian izba without a chimney in a remote land of snows and blizzards, on the margins of inhabited land, on the shores of the White Sea; who up to the age of seventeen did nothing but fish, was for a while drawn into the bosom of evil schism and was almost betrothed to a girl from the neighbouring village?" The information provided by Pogodin is still considered authentic, although modern scholars are not entirely sure that the hut in which he was born had no chimney, and they would avoid the epithet "evil."

The way Lomonosov is perceived in the West is a more complex matter. In his lifetime he was a recognized figure



in the international scientific community and a member of the Bologna and Swedish academies; he was in constant correspondence with Leonhard Euler, a member of the St. Petersburg Academy who then lived in Berlin and thought highly of his work. Mikhail Lomonosov's articles were printed not only in the Proceedings of the St. Petersburg Academy but in European journals and were probably studied by such scientists as Lavoisier and Laplace. Shortly before Lomonosov's death, Ezra Stiles, later to become president of Yale University, tried to start a correspondence with Lomonosov through Benjamin Franklin. Stiles' letter presumably only remained in Franklin's papers because news of Lomonosov's death had been received.

But Lomonosov's basic ideas in physics and chemistry, which were so far ahead of his time were not immediately appreciated and have been completely forgotten. We owe their revival largely to the efforts of professor Menshutkin who at the beginning of the century examined Lomonosov's work in these fields in-depth.

As Professor Henry Leichester, a modern scientist, has said, commenting on the Harward edition of the Selected Works of Lomonosov, "he could be hailed as the major scientist only after the rediscovery of most of his scientific writing."

From Overgrown Pupil to Adjunct of Physics

Lomonosov was born in the village of Mishaninskaya, Kurostrov Volost, Archangel Gubernia. The date of his birth is usually given as 8 (19) November, 1711, although there is no authenticated entry in the church register. His father, Vasili Dorofeyevich, was a seafarer from Kholmogory who plied his trade "at sea along the Murmansk coast and other fisheries, catching cod and halibut on his boats." Preoccupied as he was with earning his livelihood, he was described as a "man of integrity, kind to orphans, civil with neighbours though not versed in letters." Though it is unlikely that he could devote much attention to his son, he probably saw to it that he was taught the three R's. A lot should be credited to the human environment, the peasant community which did not know serfdom in the North. They were a robust, rough-and-ready people. Fist fights were weekly entertainment for the people on Sundays and feast days except in winter. The life to which Lomonosov was exposed in his youth must have taught him useful lessons and prepared him for the many battles he had to wage throughout his life, battles far more difficult than fist fights.

To be sure life in the North was not idyllic. The self-immolation of the Old Believers pursued by a military expedition in 1726, in neighbouring Ozeretsky Volost, is only one example. Mikhail Lomonosov learned a great deal in his youth. When in 1731 he reached Moscow with a convoy of sleighs carrying a consignment of fish and applied for admission to the Slavonic-Greek-Latin Academy, he knew better than to declare his humble origins. He had to enter a junior form because while he knew the three R's

he didn't know Latin, an obligatory discipline in the Academy.

Let us leaf through books and encyclopaedias to see what they have to say about Lomonosov. The Brockhaus and Efron Encyclopaedia reads: "A lucky coincidence—twelve capable students were summoned to the St. Petersburg Academy from the Moscow Academy in 1735—decided Lomonosov's fate. Three of the pupils, including Lomonosov, were sent to Marburg University in Germany in September 1736 to study under the then famous Professor Wolff, a German philosopher. Lomonosov studied mathematics, physics and philosophy under Wolff's guidance and went on to study chemistry and metallurgy under Professor Henckel at Freiberg University. After a series of mishaps (being enlisted for service in the German army and escaping from Wesel Fortress) Lomonosov returned to Petersburg in June 1741. In January 1742 he was appointed adjunct in physics at the Academy."

I'll Teach Them Letters

From 1731-36 we can trace Lomonosov's life and work from sources in his Complete Works published by the U.S.S.R. Academy of Sciences (1950-59, with Volume 11 appearing in 1983). In it we find Lomonosov's early verses written at the Slavonic-Greek-Latin Academy and his first scientific work: a dissertation on the "Transformation of Solid Matter into Liquid" sent from Marburg to the St. Petersburg Academy on October 15, 1738. The paper contains many elements of Lomonosov's "corpuscular philosophy."

In 1745 Lomonosov became a full member and Professor of chemistry at the St. Petersburg Academy of Sciences. Immediately he requested permission to give public lectures in physics. Eventually permission was granted.

The commentary to his Works (dated 1950) reads that no data is yet available on how long Lomonosov's lectures lasted and how many attended.

The first volume of the Works contains papers on physics and chemistry written between 1738 and 1746, the initial period of Lomonosov's scientific work. Along with eleven purely scientific publications there are texts of a different nature: publication No. 5 entitled "276 Notes on Corpuscular Philosophy and Physics," No. 8—"44 Notes on the Adhesion of Bodies," No. 17—another programme of work.

These three papers outline projects for the future. Along with them there are abridged translations of Lomonosov's Latin articles into Russian: he wanted his works to be available to people who did not know Latin.

Historians of science note the dramatic broadening of his range of interests after 1750: he turned his attention to geography, mineralogy, astronomy and meteorology, not to speak of language and literature and the founding of Moscow University.

An American commentator on Lomonosov's works has written: "While we must applaud his remarkable abilities as a scientist, we must regret that he did not devote more time to his scientific work." Could he have afforded to? Around him was a land of illiterate people who had to be taught to read and write. Volume 7 of the Works contains "Work on Philology." Let us skip the exposition of the rudiments of the theory of Russian versification—"Letters Concerning the Rules of Russian Versification"—and look at Lomonosov's "Russian Grammar," his contribution to the evolution of the Russian language. He felt that the people needed to be taught to speak and wrote a "Short Guide to Eloquence." It was also necessary to found the University and make education accessible to all social estates. He had to cede the credit for founding the University to Empress Elizabeth's favourite, Shuvalov, who was long considered its founder. Soviet historians have now established that the University's true founder was Mikhail Lomonosov.

"I Die at Peace"

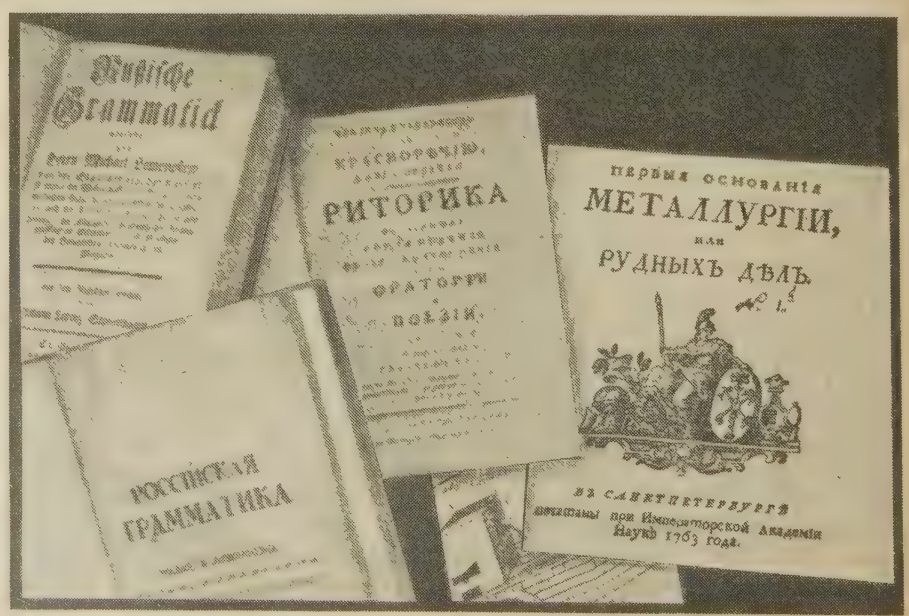
Fate did not allow much time to Mikhail Lomonosov, and his last decade was difficult. With the death of Elizabeth, Shuvalov, who had helped Lomonosov in many ways, lost his political influence, and Lomonosov's position in the Academy was weakened. The glass factory he founded operated at a loss.

Under Catherine II, Lomonosov's position began to improve. While the Empress's morals may have been dubious, this did not blunt her intelligence: she understood that Lomonosov was the pride of Russia. On October 10, 1763, he was elected a member of the Academy of Arts. He delivered his inaugural address in Catherine's presence. On December 20, 1763, Catherine appointed him State Counsellor. In the summer of 1763 Catherine II and Ekaterina Dashkova, an outstanding figure of her reign, visited Lomonosov in his home. But Lomonosov was already on his deathbed.

Did Mikhail Lomonosov think his name would be immortal? Hardly. He was not afraid of death; he knew that he was dying and his thoughts were probably about the projects he was leaving unfinished. Shortly before his death he wrote: "I die at peace: I have lived and endured and I know that the children of my native land will miss me."

How did Mikhail Lomonosov's reputation evolve after his death? If we turn to the Brockhaus Encyclopaedia we see that P. Vladimirov, who contributed the article on Lomonosov, describes him as a famous poet and scholar and "the first Russian who could rightly be ranked with contemporary European scientists as regards the number, diversity and originality of his scientific writings in physics, chemistry, metallurgy, etc." He writes that "contemporary Russian scientists find in Lomonosov's works brilliant ideas on natural sciences which were ahead of

Some of the books written by Lomonosov.



his time." Even so the author of this entry regards him as "poet" first, and "scientist" second.

This is no accident. In the 19th century Lomonosov's influence was chiefly on Russian poets. Yuri Tynyanov wrote: "Lomonosov's metres were used by Lermontov. Lomonosov's influence crops up here and there in the 19th-century poetry." However, Lomonosov's odes appeared somewhat heavy. Now, after Khlebnikov and Pasternak, they seem less so. Let us look at his ode "Morning Reflections on the Greatness of God": the poet describes the sun as seen by a scientist. Lomonosov's poems are best appreciated when read in full but here is an excerpt:

There, fiery billows rise
And find no shores,
Flaming storms swirl
In their age-long battle.
There, rock boils like water
And burning showers fall.

After Lomonosov, no Russian poet attained comparable stature as a natural scientist. Perhaps a future second greatest Russian poet after Pushkin would need to combine Lomonosov's scientific and poetic ability with Pushkin's inspiration.

Although I have furnished more than one proof that in Russia at least Lomonosov has never been forgotten as a natural scientist, his greatness has only been fully appreciated in our time.

Lomonosov was a consistent proponent of the first physical picture of the world or, to use a modern term, a paradigm based on the mechanics of ideally solid atoms. Unfortunately, Lomonosov's ideas were not immediately developed and it is only in this century that they have been accorded their due. Lomonosov made some inspired guesses. He predicted, for example, that the Boyle-Mariotte law would not hold for high densities and tried to prove corresponding deviations experimentally. Strictly adhering to his chosen paradigm, Lomonosov rejected remote forces as the primary element in the physical picture of the world, believed in ether to which he ascribed an atomic structure and favoured the wave theory of light. Proceeding from these ideas, which he evolved with great consistency, Lomonosov anticipated many discoveries. For example, he divided the motion of molecules into rotary, oscillatory and translational, a division that remains valid to this day.

Lomonosov was aware that there must exist an absolute temperature zero which he defined in the framework of classical ideas as the temperature below which all atomic movement stops.

This list of Lomonosov's achievements is not exhaustive. He did much work on the Northern Lights, linking their origin with electricity. He was the first to identify the three primary complementary colours which when mixed produce white—red, yellow and blue.

Going through the Works volume by volume, we become aware of a natural scientist of immense breadth whose interests covered practically all contemporary natural sciences, with the exception perhaps, of biology. He classified the polar ices. A commentator writes that the classification proposed by Lomonosov was far ahead of his time. He asserted that it was possible for ice to form from salt water in the open sea which challenged the view prevalent in the 18th century.

We see a geologist who knew that "a mountain reveals the general properties of the ores it contains." We see a statesman who knew that "Siberia will increase Russia's might." I must stop here: to gain a true idea of the scope of Lomonosov's work one has to study his writings carefully.

Only one other man in the history of modern science bears comparison with Mikhail Lomonosov. He is Leonardo da Vinci. However, we should not try to compare them, all the more so as the two men were separated by two hundred years.

We may, however, safely attempt to identify Lomonosov's place in history. The answer was provided by Pushkin who said he was "the first Russian University." In this he stands alone. ■

APPOINTMENTS

Nikolai Kirillovich DYBENKO

Ambassador of the U.S.S.R. to Mozambique

Nikolai Dybenko, a Russian, was born in Novozybkov, Bryansk Region, on October 21, 1928. He graduated from the Siberian Ore Mining and Smelting Institute in 1952, and from the Higher Party School of the CPSU Central Committee in 1961. He has been a CPSU member since 1951.

Upon graduating from the institute, Nikolai Dybenko worked as an engineer in the Yaroslavl and Novosibirsk regions. Transferred to Party and government work in 1955 he held the posts of head of department, second secretary of a district Party committee, Chairman of a district executive committee and first secretary of a district Party committee in 1955-62. Between 1962 and 1964, he was head of department and then secretary of the Novosibirsk Regional CPSU Committee. In 1964-73 Nikolai Dybenko was first secretary of the Novosibirsk City CPSU Committee and then secretary of the Novosibirsk Regional CPSU Committee. In 1973-78 he was head of sector of a Department of the CC CPSU. In 1978-86 Nikolai Dybenko was second secretary of the Central Committee of the Communist Party of Lithuania.

CC CPSU alternate member, a delegate to the 23rd, 24th, 26th and 27th CPSU congresses, a deputy to the U.S.S.R. Supreme Soviet of the 10th and 11th convocations, Nikolai Dybenko has been awarded two Orders of the Red Banner of Labour, the Order of the Badge of Honour, and a number of medals.

Gennady Serafimovich SHIKIN

Ambassador of the U.S.S.R. to Austria

Gennady Shikin, a Russian, was born in Leningrad on August 30, 1938. He graduated from the Moscow Institute of International Relations in 1961, and has been a member of the CPSU since 1965.

A career diplomat, in 1962-64 Gennady Shikin worked at the headquarters of the U.S.S.R. Foreign Ministry as junior assistant, an attaché at the third European department and an attaché at the fifth European department. In 1964-66 he was an attaché at the U.S.S.R. Embassy in Yugoslavia; in 1966-68—third and second secretary of the press department of the U.S.S.R. Foreign Ministry; and in 1968-74—second and first secretary of the U.S.S.R. Embassy in the F.R.G. Subsequently, Gennady Shikin was head of sector of the third European department and in 1976-86, deputy head of the same department. From May to October, 1986, Gennady Shikin was deputy head of the General Secretariat of the Foreign Ministry of the U.S.S.R.

Gennady Shikin has been awarded a number of government decorations.

DOCUMENT OF THE STOCKHOLM CONFERENCE

ON CONFIDENCE- AND SECURITY-BUILDING MEASURES AND DISARMAMENT IN EUROPE CONVENED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF THE CONCLUDING DOCUMENT OF THE MADRID MEETING OF THE CONFERENCE ON SECURITY AND COOPERATION IN EUROPE

The Conference on Confidence- and Security-Building Measures and Disarmament in Europe came to a close in Stockholm last September. The Conference which lasted two years and eight months and was attended by representatives from 33 European countries, the U.S.A. and Canada, adopted the Concluding Document providing for a coordinated package of political and military-technical measures to reduce the threat of war in Europe, to strengthen security and to build mutual confidence. In the Concluding Document, the participating states recorded their commitment to the principle of refraining from the use or threat of force. "This is the triumph of common sense, a win for all the thirty-five countries which took part in the Conference," Mikhail Gorbachev, General Secretary of the CPSU Central Committee, stressed. "...Stockholm has shown that even in a complicated situation it is possible to reach agreement on security issues given the political will."

(1) THE REPRESENTATIVES of the participating states of the Conference on Security and Cooperation in Europe (CSCE), Austria, Belgium, Bulgaria, Canada, Cyprus, Czechoslovakia, Denmark, Finland, France, the German Democratic Republic, the Federal Republic of Germany, Greece, the Holy See, Hungary, Iceland, Ireland, Italy, Liechtenstein, Luxemburg, Malta, Monaco, the Netherlands, Norway, Poland, Portugal, Romania, San Marino, Spain, Sweden, Switzerland, Turkey, the Union of Soviet Socialist Republics, the United Kingdom, the United States of America and Yugoslavia, met in Stockholm from 17 January 1984 to 19 September 1986, in accordance with the provisions relating to the Conference on Confidence- and Security-Building Measures and Disarmament in Europe contained in the Concluding Document of the Madrid Follow-up Meeting of the CSCE.

(2) The participants were addressed by the Prime Minister of Sweden, the late Olof Palme, on 17 January 1984.

(3) Opening statements were made by the Ministers of Foreign Affairs and other Heads of Delegation. The Prime Minister of Spain as well as Ministers and senior officials of several other participating states addressed the conference later. The Minister for Foreign Affairs of Sweden addressed the conference on 19 September 1986.

(4) The Secretary-General of the United Nations addressed the conference on 6 July 1984.

(5) Contributions were made by the following non-participating Mediterranean states: Algeria, Egypt, Israel, Lebanon, Libya, Morocco, Syria and Tunisia.

(6) The participating states recalled that the aim of the Conference on Confidence- and Security-Building Measures and Disarmament in Europe is, as a substantial and integral part of the multilateral process initiated by the Conference on Security and Cooperation in Europe, to undertake, in stages, new, effective and concrete actions designed to make progress in strengthening confidence and security and in achieving disarmament, so as to give effect and expression to the duty of states to refrain from the threat or use of force in their mutual relations as well as in their international relations in general.

(7) The participating states recognized that the set of mutually complementary confidence- and security-building measures which are adopted in the present document and which are in accordance with the Madrid Mandate serve by their scope and nature and by their implementation to strengthen confidence and security in Europe and thus to give effect and expression to the duty of states to refrain from the threat or use of force.

(8) Consequently the participating states have declared the following:

REFRAINING FROM THE THREAT OR USE OF FORCE

(9) THE PARTICIPATING STATES, recalling their obligation to refrain, in their mutual relations as well as in their international relations in general, from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the purposes of the United Nations, accordingly reaffirm their commitment to respect and put into practice the principle of refraining from the threat or use of force, as laid down in the Final Act.

(10) No consideration may be invoked to serve to warrant resort to the threat or use of force in contravention of this principle.

(11) They recall the inherent right of individual or collective self-defence if an armed attack occurs, as set forth in the Charter of the United Nations.

(12) They will refrain from any manifestation of force for the purpose of inducing any other state to renounce the full exercise of its sovereign rights.

(13) As set forth in the Final Act, no occupation or acquisition of territory resulting from the threat or use of force in contravention of international law will be recognized as legal.

(14) They recognize their commitment to peace and security. Accordingly they reaffirm that they will refrain from any use of armed forces inconsistent with the purposes and principles of the Charter of the United Nations and the provisions of the Declaration on Principles Guiding Relations between Participating States against another participating state, in particular from invasion of or attack on its territory.

(15) They will abide by their commitment to refrain from the threat or use of force in their relations with any state, regardless of that state's political, social, economic or cultural system

and irrespective of whether or not they maintain with that state relations of alliance.

(16) They stress that non-compliance with the obligation of refraining from the threat or use of force, as recalled above, constitutes a violation of international law.

(17) They stress their commitment to the principle of peaceful settlement of disputes as contained in the Final Act, convinced that it is an essential complement to the duty of states to refrain from the threat or use of force, both being essential factors for the maintenance and consolidation of peace and security. They recall their determination and the necessity to reinforce and to improve the methods at their disposal for the peaceful settlement of disputes. They reaffirm their resolve to make every effort to settle exclusively by peaceful means any dispute between them.

(18) The participating states stress their commitment to the Final Act and the need for full implementation of all its provisions, which will further the process of improving security and developing cooperation in Europe, thereby contributing to international peace and security in the world as a whole.

(19) They emphasize their commitment to all the principles of the Declaration on Principles Guiding Relations between Participating States and declare their determination to respect and put them into practice, irrespective of their political, economic or social systems, as well as of their size, geographical location or level of economic development.

(20) All these ten principles are of primary significance and, accordingly, they will be equally and unreservedly applied, each of them being interpreted taking into account the others.

(21) Respect for and the application of these principles will enhance the development of friendly relations and cooperation among the participating states in all fields covered by the provisions of the Final Act.

(22) They reconfirm their commitment to the basic principle of the sovereign equality of states and stress that all states have equal rights and duties within the framework of international law.

(23) They reaffirm the universal significance of human rights and fundamental freedoms. Respect for and the effective exercise of these rights and freedoms are essential factors for international peace, justice and security, as well as for the development of friendly relations and cooperation among themselves as among all states, as set forth in the Declaration on Principles Guiding Relations between Participating States.

(24) They reaffirm that, in the broader context of world security, security in Europe is closely linked with security in the Mediterranean area as a whole; in this context, they confirm their intention to develop good-neighbourly relations with all states in the region, with due regard to reciprocity, and in the spirit of the principles contained in the Declaration on Principles Guiding Relations between Participating States, so as to promote confidence and security and make peace prevail in the region in accordance with the provisions contained in the Mediterranean chapter of the Final Act.

(25) They emphasize the necessity to take resolute measures to prevent and to combat terrorism, including terrorism in international relations. They express their determination to take effective measures, both at the national level and through international cooperation, for the prevention and suppression of all acts of terrorism. They will take all appropriate measures in preventing their respective territories from being used for the preparation, organization or commission of terrorist activities. This also includes measures to prohibit on their territories illegal activities, including subversive activities, of persons, groups and organizations that instigate, organize or engage in the perpetration of acts of terrorism, including those directed against other states and their citizens.

(26) They will fulfil in good faith their obligations under international law; they also stress that strict compliance with their commitments within the framework of the CSCE is essential for building confidence and security.

(27) The participating states confirm that in the event of a conflict between the obligations of the members of the United Nations under the Charter of the United Nations and their obligations under any treaty or other international agreement, their obligations under the Charter will prevail, in accordance with Article 103 of the Charter of the United Nations.

(28) The participating states have adopted the following measures:

PRIOR NOTIFICATION OF CERTAIN MILITARY ACTIVITIES

(29) THE PARTICIPATING STATES will give notification in writing through diplomatic channels in an agreed form of content to all other participating states 42 days or more in advance of the start of notifiable* military activities in the zone of application for confidence- and security-building measures (CSBMs).**

(30) Notification will be given by the participating state on whose territory the activity in question is planned to take place even if the forces of that state are not engaged in the activity or their strength is below the notifiable level. This will not relieve other participating states of their obligation to give notification, if their involvement in the planned military activity reaches the notifiable level.

(31) Each of the following military activities in the field conducted as a single activity in the zone of application for CSBMs at or above the levels defined below, will be notified:

(31.1) The engagement of formations of land forces*** of the participating states in the same exercise activity conducted under a single operational command independently or in combination with any possible air or naval components.

(31.1.1) This military activity will be subject to notification whenever it involves at any time during the activity:

— at least 13,000 troops, including support troops, or

— at least 300 battle tanks

if organized into a divisional structure or at least two brigades/regiments, not necessarily subordinate to the same division.

(31.1.2) The participation of air forces of the participating states will be included in the notification if it is foreseen that in the course of the activity 200 or more sorties by aircraft, excluding helicopters, will be flown.

(31.2) The engagement of military forces either in an amphibious landing or in a parachute assault by airborne forces in the zone of application for CSBMs.

(31.2.1) These military activities will be subject to notification whenever the amphibious landing involves at least 3,000 troops or whenever the parachute drop involves at least 3,000 troops.

(31.3) The engagement of formations of land forces of the participating states in a transfer from outside the zone of application for CSBMs to arrival points in the zone, or from inside the zone of application for CSBMs to points of concentration in the zone, to participate in a notifiable exercise activity or to be concentrated.

(31.3.1) The arrival or concentration of these forces will be subject to notification whenever it involves at any time during the activity:

— at least 13,000 troops, including support troops, or

— at least 300 battle tanks

if organized into a divisional structure or at least two brigades/regiments, not necessarily subordinate to the same division.

(31.3.2) Forces which have been transferred into the zone will be subject to all provisions of agreed CSBMs when they depart their arrival points to participate in a notifiable exercise

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* In this document, the term notifiable means subject to notification.

** See Annex I.

*** In this context, the term land forces includes amphibious, airmobile and airborne forces.

activity or to be concentrated within the zone of application for CSBMs.

(32) Notifiable military activities carried out without advance notice to the troops involved are exceptions to the requirement for prior notification to be made 42 days in advance.

(32.1) Notification of such activities, above the agreed thresholds, will be given at the time the troops involved commence such activities.

(33) Notification will be given in writing of each notifiable military activity in the following agreed form:

(34) **A—General information**

(34.1) The designation of the military activity;

(34.2) The general purpose of the military activity;

(34.3) The names of the states involved in the military activity;

(34.4) The level of command, organizing and commanding the military activity;

(34.5) The start and end dates of the military activity.

(35) **B—Information on different types of notifiable military activities**

(35.1) The engagement of formations of land forces of the participating states in the same exercise activity conducted under a single operational command independently or in combination with any possible air or naval components:

(35.1.1) The total number of troops taking part in the military activity (i.e., ground troops, amphibious troops, airmobile and airborne troops) and the number of troops participating for each state involved, if applicable;

(35.1.2) Number and type of divisions participating for each state;

(35.1.3) The total number of battle tanks for each state and the total number of anti-tank guided missile launchers mounted on armoured vehicles;

(35.1.4) The total number of artillery pieces and multiple rocket launchers (100 mm calibre or above);

(35.1.5) The total number of helicopters, by category;

(35.1.6) Envisaged number of sorties by aircraft, excluding helicopters;

(35.1.7) Purpose of air missions;

(35.1.8) Categories of aircraft involved;

(35.1.9) The level of command, organizing and commanding the air force participation;

(35.1.10) Naval ship-to-shore gunfire;

(35.1.11) Indication of other naval ship-to-shore support;

(35.1.12) The level of command, organizing and commanding the naval force participation.

(35.2) The engagement of military forces either in an amphibious landing or in a parachute assault by airborne forces in the zone of application for CSBMs:

(35.2.1) The total number of amphibious troops involved in notifiable amphibious landings, and/or the total number of airborne troops involved in notifiable parachute assaults;

(35.2.2) In the case of a notifiable amphibious landing, the point or points of embarkation, if in the zone of application for CSBMs.

(35.3) The engagement of formations of land forces of the participating states in a transfer from outside the zone of application for CSBMs to arrival points in the zone, or from inside the zone of application for CSBMs to points of concentration in the zone, to participate in a notifiable exercise activity or to be concentrated:

(35.3.1) The total number of troops transferred;

(35.3.2) Number and type of divisions participating in the transfer;

(35.3.3) The total number of battle tanks participating in a notifiable arrival or concentration;

(35.3.4) Geographical coordinates for the points of arrival and for the points of concentration.

(36) **C—The envisaged area and timeframe of the activity**

(36.1) The area of the military activity delimited by geographic features together with geographic co-ordinates, as appropriate;

(36.2) The start and end dates of each phase (transfers, deployment, concentration of forces, active exercise phase, recovery phase) of activities in the zone of application for CSBMs of participating formations, the tactical purpose and corresponding geographical areas (delimited by geographical coordinates) for each phase;

(36.3) Brief description of each phase.

(37) **D—Other information**

(37.1) Changes, if any, in relation to information provided in the annual calendar regarding the activity;

(37.2) Relationship of the activity to other notifiable activities.

OBSERVATION OF CERTAIN MILITARY ACTIVITIES

(38) THE PARTICIPATING STATES will invite observers from all other participating states to the following notifiable military activities:

(38.1) — The engagement of formations of land forces* of the participating states in the same exercise activity conducted under a single operational command independently or in combination with any possible air or naval components.

(38.2) — The engagement of military forces either in an amphibious landing or in a parachute assault by airborne forces in the zone of application for CSBMs.

(38.3) — In the case of the engagement of formations of land forces of the participating states in a transfer from outside the zone of application for CSBMs to arrival points in the zone, or from inside the zone of application for CSBMs to points of concentration in the zone, to participate in a notifiable exercise activity or to be concentrated, the concentration of these forces. Forces which have been transferred into the zone will be subject to all provisions of agreed confidence- and security-building measures when they depart their arrival points to participate in a notifiable exercise activity or to be concentrated within the zone of application for CSBMs.

(38.4) The above-mentioned activities will be subject to observation whenever the number of troops engaged reaches or exceeds 17,000 troops, except in the case of either an amphibious landing or a parachute assault by airborne forces, which will be subject to observation whenever the number of troops engaged reaches or exceeds 5,000 troops.

(39) The host state will extend the invitations in writing through diplomatic channels to all other participating states at the time of notification. The host state will be the participating state on whose territory the notified activity will take place.

(40) The host state may delegate some of its responsibilities as host to another participating state engaged in the military activity on the territory of the host state. In such cases, the host state will specify the allocation of responsibilities in its invitation to observe the activity.

(41) Each participating state may send up to two observers to the military activity to be observed.

(42) The invited state may decide whether to send military and/or civilian observers, including members of its personnel accredited to the host state. Military observers will, normally, wear their uniforms and insignia while performing their tasks.

(43) Replies to the invitation will be given in writing not later than 21 days after the issue of the invitation.

(44) The participating states accepting an invitation will provide the names and ranks of their observers in their reply to the invitation. If the invitation is not accepted in time, it will be assumed that no observers will be sent.

(45) Together with the invitation the host state will provide a general observation programme, including the following information:

(45.1) — the date, time and place of assembly of observers;

(45.2) — planned duration of the observation programme;

* In this context, the term land forces includes amphibious, airmobile and airborne forces.

(45.3) — languages to be used in interpretation and/or translation;

(45.4) — arrangements for board, lodging and transportation of the observers;

(45.5) — arrangements for observation equipment which will be issued to the observers by the host state;

(45.6) — possible authorization by the host state of the use of special equipment that the observers may bring with them;

(45.7) — arrangements for special clothing to be issued to the observers because of weather or environmental factors.

(46) The observers may make requests with regard to the observation programme. The host state will, if possible, accede to them.

(47) The host state will determine the duration of observation which permits the observers to observe a notifiable military activity from the time that agreed thresholds for observation are met or exceeded until, for the last time during the activity, the thresholds for observation are no longer met.

(48) The host state will provide the observers with transportation to the area of the notified activity and back. This transportation will be provided from either the capital or another suitable location to be announced in the invitation, so that the observers are in position before the start of the observation programme.

(49) The invited state will cover the travel expenses for its observers to the capital, or another suitable location specified in the invitation, of the host state, and back.

(50) The observers will be provided equal treatment and offered equal opportunities to carry out their functions.

(51) The observers will be granted, during their mission, the privileges and immunities accorded to diplomatic agents in the Vienna Convention on Diplomatic Relations.

(52) The host state will not be required to permit observation of restricted locations, installations or defence sites.

(53) In order to allow the observers to confirm that the notified activity is non-threatening in character and that it is carried out in conformity with the appropriate provisions of the notification, the host state will:

(53.1) — at the commencement of the observation programme give a briefing on the purpose, the basic situation, the phases of the activity and possible changes as compared with the notification and provide the observers with a map of the area of the military activity with a scale of 1 to not more than 500,000 and an observation programme with a daily schedule as well as a sketch indicating the basic situation.

(53.2) — provide the observers with appropriate observation equipment; however, the observers will be allowed to use their personal binoculars, which will be subject to examination and approval by the host state;

(53.3) — in the course of the observation programme give the observers daily briefings with the help of maps on the various phases of the military activity and their development and inform the observers about their positions geographically; in the case of a land force activity conducted in combination with air or naval components, briefings will be given by representatives of these forces;

(53.4) — provide opportunities to observe directly forces of the state/states engaged in the military activity so that the observers get an impression of the flow of the activity; to this end, the observers will be given the opportunity to observe major combat units of the participating formations of a divisional or equivalent level and, whenever possible, to visit some units and communicate with commanders and troops; commanders or other senior personnel of participating formations as well as of the visited units will inform the observers of the mission of their respective units;

(53.5) — guide the observers in the area of the military activity; the observers will follow the instructions issued by the host state in accordance with the provisions set out in this document;

(53.6) — provide the observers with appropriate means of transportation in the area of the military activity;

(53.7) — provide the observers with opportunities for timely communication with their embassies or other official missions and consular posts; the host state is not obligated to cover the communication expense of the observers;

(53.8) — provide the observers with appropriate board and lodging in a location suitable for carrying out the observation programme and, when necessary, medical care.

(54) The participating states need not invite observers to notifiable military activities which are carried out without advance notice to the troops involved unless these notifiable activities have a duration of more than 72 hours. The continuation of these activities beyond this time will be subject to observation while the agreed thresholds for observation are met or exceeded. The observation programme will follow as closely as practically possible all the provisions for observation set out in this document.

ANNUAL CALENDARS

(55) EACH PARTICIPATING STATE will exchange, with all other participating states, an annual calendar of its military activities subject to prior notification*, within the zone of application for CSBMs, forecast for the subsequent calendar year. It will be transmitted every year in writing, through diplomatic channels, not later than 15 November for the following year.

(56) Each participating state will list the above-mentioned activities choronologically and will provide information on each activity in accordance with the following model:

(56.1) — type of military activity and its designation;

(56.2) — general characteristics and purpose of the military activity;

(56.3) — states involved in the military activity;

(56.4) — area of the military activity, indicated by appropriate geographic features and/or defined by geographic coordinates;

(56.5) — planned duration of the military activity and the 14-day period, indicated by dates, within which it is envisaged to start;

(56.6) — the envisaged total number of troops** engaged in the military activity;

(56.7) — the types of armed forces involved in the military activity;

(56.8) — the envisaged level of command, under which the military activity will take place;

(56.9) — the number and type of divisions whose participation in the military activity is envisaged;

* as defined in the provisions on Prior Notification of Certain Military Activities.

** as defined in the provisions on Prior Notification of Certain Military Activities.

(56.10) — any additional information concerning, inter alia, components of armed forces, which the participating state planning the military activity considers relevant.

(57) Should changes regarding the military activities in the annual calendar prove necessary, they will be communicated to all other participating states not later than in the appropriate notification.

(58) Information on military activities subject to prior notification but not included in an annual calendar will be communicated to all participating states as soon as possible, in accordance with the model provided in the annual calendar.

CONSTRAINING PROVISIONS

(59) EACH PARTICIPATING state will communicate, in writing, to all other participating states, by 15 November each year, information concerning military activities subject to prior notification* involving more than 40,000 troops*, which it plans to carry out in the second subsequent calendar year. Such communication will include preliminary information on each activity, as to its general purpose, timeframe and duration, area, size and states involved.

(60) Participating states will not carry out military activities subject to prior notification involving more than 75,000 troops, unless they have been the object of communication as defined above.

(61) Participating states will not carry out military activities subject to prior notification involving more than 40,000 troops unless they have been included in the annual calendar, not later than 15 November each year.

(62) If military activities subject to prior notification are carried out in addition to those contained in the annual calendar, they should be as few as possible.

COMPLIANCE AND VERIFICATION

(63) ACCORDING TO the Madrid Mandate, the confidence- and security-building measures to be agreed upon "will be provided with adequate forms of verification which correspond to their content."

(64) The participating states recognize that national technical means can play a role in monitoring compliance with agreed confidence- and security-building measures.

(65) In accordance with the provisions contained in this document each participating state has the right to conduct inspections on the territory of any other participating state within the zone of application for CSBMs.

(66) Any participating state will be allowed to address a request for inspection to another participating state on whose territory, within the zone of application for CSBMs, compliance with the agreed confidence- and security-building measures is in doubt.

(67) No participating state will be obliged to accept on its territory within the zone of application for CSBMs, more than three inspections per calendar year.

(68) No participating state will be obliged to accept more than one inspection per calendar year from the same participating state.

(69) An inspection will not be counted if, due to force majeure, it cannot be carried out.

(70) The participating state which requests an inspection will state the reasons for such a request.

(71) The participating state which has received such a request will reply in the affirmative to the request within the agreed period of time, subject to the provisions contained in paragraphs (67) and (68).

(72) Any possible dispute as to the validity of the reasons for a request will not prevent or delay the conduct of an inspection.

(73) The participating state which requests an inspection will be permitted to designate for inspection on the territory of another state within the zone of application for CSBMs a specific area. Such an area will be referred to as the "specified area." The specified area will comprise terrain where notifiable military activities are conducted or where another participating state believes a notifiable military activity is taking place. The specified area will be defined and limited by the scope and scale of notifiable military activities but will not exceed that required for an army level military activity.

(74) In the specified area the representatives of the inspecting state accompanied by the representatives of the receiving state will be permitted access, entry and unobstructed survey, except for areas or sensitive points to which access is normally denied or restricted, military and other defence installations, as well as naval vessels, military vehicles and aircraft. The number and extent of the restricted areas should be as limited as possible. Areas where notifiable military activities can take place will not be declared restricted areas, except for certain permanent or temporary military installations which, in territorial terms, should be as small as possible, and consequently those areas will not be used to prevent inspection of notifiable military activities. Restricted areas will not be employed in a way inconsistent with the agreed provisions on inspection.

(75) Within the specified area, the forces of participating states other than the receiving state will also be subject to the inspection conducted by the inspecting state.

(76) Inspection will be permitted on the ground, from the air, or both.

(77) The representatives of the receiving state will accompany the inspection team, including when it is in land vehicles and an aircraft from the time of their first employment until the time they are no longer in use for the purposes of inspection.

(78) In its request, the inspecting state will notify the receiving state of:

(78.1) — the reasons for the request;

(78.2) — the location of the specified area defined by geographical coordinates;

(78.3) — the preferred point(s) of entry for the inspection team;

(78.4) — mode of transport to and from the point(s) of entry and, if applicable, to and from the specified area;

(78.5) — where in the specified area the inspection will begin;

* as defined in the provisions on Prior Notification of Certain Military Activities.

(78.6) — whether the inspection will be conducted from the ground, from the air, or both simultaneously;

(78.7) — whether aerial inspection will be conducted using an airplane, a helicopter, or both;

(78.8) — whether the inspection team will use land vehicles provided by the receiving state or, if mutually agreed, its own vehicles;

(78.9) — information for the issuance of diplomatic visas to inspectors entering the receiving state.

(79) The reply to the request will be given in the shortest possible period of time, but within not more than twenty-four hours. Within thirty-six hours after the issuance of the request, the inspection team will be permitted to enter the territory of the receiving state.

(80) Any request for inspection as well as the reply thereto will be communicated to all participating states without delay.

(81) The receiving state should designate the point(s) of entry as close as possible to the specified area. The receiving state will ensure that the inspection team will be able to reach the specified area without delay from the point(s) of entry.

(82) All participating states will facilitate the passage of the inspection teams through their territory.

(83) Within 48 hours after the arrival of the inspection team at the specified area, the inspection will be terminated.

(84) There will be no more than four inspectors in an inspection team. While conducting the inspection the inspection team may divide into two parts.

(85) The inspectors and, if applicable, auxiliary personnel, will be granted during their mission the privileges and immunities in accordance with the Vienna Convention on Diplomatic Relations.

(86) The receiving state will provide the inspection team with appropriate board and lodging in a location suitable for carrying out the inspection, and, when necessary, medical care; however this does not exclude the use by the inspection team of its own tents and rations.

(87) The inspection team will use its own maps, own photo cameras, own binoculars and own dictaphones, as well as own aeronautical charts.

(88) The inspection team will have access to appropriate telecommunications equipment of the receiving state, including the opportunity for continuous communication between the members of an inspection team in an aircraft and those in a land vehicle employed in the inspection.

(89) The inspecting state will specify whether aerial inspection will be conducted using an airplane, a helicopter or both. Aircraft for inspection will be chosen by mutual agreement between the inspecting and receiving states. Aircraft will be chosen which provide the inspection team a continuous view of the ground during the inspection.

(90) After the flight plan, specifying, **inter alia,** the inspection team's choice of flight path, speed and altitude in the specified area, has been filed with the competent air traffic control authority the inspection aircraft will be permitted to enter the specified area without delay. Within the specified area, the inspection team will, at its request, be permitted to deviate from the approved flight plan to make specific observations provided such deviation is consistent with paragraph (74) as well as flight safety and air traffic requirements. Directions to the crew will be given through a representative of the receiving state on board the aircraft involved in the inspection.

(91) One member of the inspection team will be permitted, if such a request is made, at any time to observe data on navigational equipment of the aircraft and to have access to maps and charts used by the flight crew for the purpose of determining the exact location of the aircraft during the inspection flight.

(92) Aerial and ground inspectors may return to the specified areas as often as desired within the 48-hour inspection period.

(93) The receiving state will provide for inspection purposes land vehicles with cross country capability. Whenever mutually agreed and taking into account the specific geography relating to the area to be inspected, the inspecting state will be permitted to use its own vehicles.

(94) If land vehicles or aircraft are provided by the inspecting state, there will be one accompanying driver for each land vehicle, or accompanying aircraft crew.

(95) The inspecting state will prepare a report of its inspection and will provide a copy of that report to all participating states without delay.

(96) The inspection expenses will be incurred by the receiving state except when the inspecting state uses its own aircraft and/or land vehicles. The travel expenses to and from the point(s) of entry will be borne by the inspecting state.

(97) Diplomatic channels will be used for communications concerning compliance and verification.

(98) Each participating state will be entitled to obtain timely clarification from any other participating state concerning the application of agreed confidence- and security-building measures. Communications in this context will, if appropriate, be transmitted to all other participating states.

✦

(99) The participating states stress that these confidence- and security-building measures are designed to reduce the dangers of armed conflict and of misunderstanding or miscalculation of military activities and emphasize that their implementation will contribute to these objectives.

(100) Reaffirming the relevant objectives of the Final Act, the participating states are determined to continue building confidence, to lessen military confrontation and to enhance security for all. They are also determined to achieve progress in disarmament.

(101) The measures adopted in this document are politically binding and will come into force on 1 January 1987.

(102). The Government of Sweden is requested to transmit the present document to the follow-up meeting of the CSCE in Vienna and to the Secretary-General of the United Nations. The Government of Sweden is also requested to transmit the present document to the governments of the non-participating Mediterranean states.

(103) The text of this document will be published in each participating state, which will disseminate it and make it known as widely as possible.

(104) The representatives of the participating states express their profound gratitude to the government and people of Sweden for the excellent arrangements made for the Stockholm conference and the warm hospitality extended to the delegations which participated in the conference.

Stockholm, 19 September 1986

ANNEX I

Under the terms of the Madrid Mandate, the zone of application for CSBMs is defined as follows:

"On the basis of equality of rights, balance and reciprocity, equal respect for the security interests of all CSCE participating states, and of their respective obligations concerning confidence- and security-building measures and disarmament in Europe, these confidence- and security-building measures will cover the whole of Europe as well as the adjoining sea area* and airspace. They will be of military significance and politically binding and will be provided with adequate forms of verification which correspond to their content.

As far as the adjoining sea area* and airspace is concerned, the measures will be applicable to the military activities of all the participating states taking place there whenever these activities affect security in Europe as well as constitute a part of activities taking place within the whole of Europe as referred to above, which they will agree to notify. Necessary specifications will be made through the negotiations on the confidence- and security-building measures at the conference.

Nothing in the definition of the zone given above will diminish obligations already undertaken under the Final Act. The confidence- and security-building measures to be agreed upon at the conference will also be applicable in all areas covered by any of the provisions in the Final Act relating to confidence-building measures and certain aspects of security and disarmament.

Wherever the term "the zone of application for CSBMs" is used in this document, the above definition will apply.

* In this context, the notion of adjoining sea area is understood to refer also to ocean areas adjoining Europe.

ANNEX II

CHAIRMAN'S STATEMENT

IT IS UNDERSTOOD that, taking into account the agreed date of entry into force of the agreed confidence- and security-building measures and the provisions contained in them concerning the timeframes of certain advance notifications, and expressing their interest in an early transition to the full implementation of the provisions of this document, the participating states agree to the following:

The annual calendars concerning military activities subject to prior notification and forecast for 1987 will be exchanged not later than 15 December 1986.

Communications, in accordance with agreed provisions, concerning military activities involving more than 40,000 troops planned for the calendar year 1988 will be exchanged by 15 December 1986. Participating states may undertake activities involving more than 75,000 troops during the calendar year 1987 provided they are included in the annual calendar exchanged by 15 December 1986.

Activities to begin during the first 42 days after 1 January 1987 will be subject to the relevant provisions of the Final Act of the CSCE. However, the participating states will make every effort to apply to them the provisions of this document to the maximum extent possible.

This statement will be an annex to the Document of the Stockholm conference and will be published with it.

Stockholm, 19 September 1986

ANNEX III

CHAIRMAN'S STATEMENT

IT IS UNDERSTOOD that each participating state can raise any question consistent with the mandate of the Conference on Confidence- and Security-Building Measures and Disarmament in Europe at any stage subsequent to the Vienna CSCE Follow-up Meeting.

This statement will be an annex to the Document of the Stockholm conference and will be published with it.

Stockholm, 19 September 1986

ANNEX IV

CHAIRMAN'S STATEMENT

IT IS UNDERSTOOD that the participating states recall that they have the right to belong or not to belong to international organizations, to be or not to be a party to bilateral or multilateral treaties, including the right to be or not to be a party to treaties of alliance; they also have the right of neutrality. In this context, they will not take advantage of these rights to circumvent the purposes of the system of inspection, and in particular the provision that no participating state will be obliged to accept on its territory within the zone of application for CSBMs more than three inspections per calendar year.

Appropriate understandings between participating states on this subject will be expressed in interpretative statements to be included in the journal of the day.

This statement will be an annex to the Document of the Stockholm conference and will be published with it.

Stockholm, 19 September 1986

Soviet Culture Fund

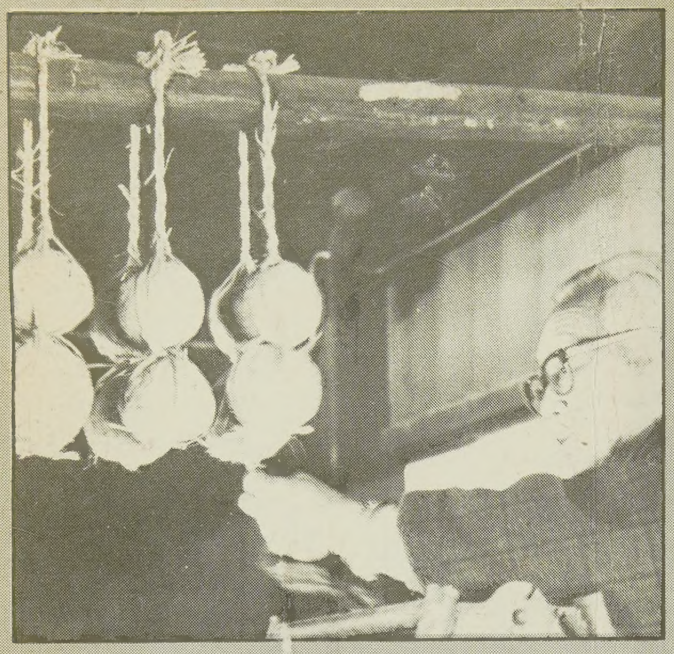
Contributions to the Soviet Culture Fund, recently founded for the purpose of preserving the treasure trove of our history, have begun to flow in. More and more donations are entered on U.S.S.R. State Bank account No. 700 specially opened for the purpose. But there are donations that go far beyond bank account dimensions. For instance, two canvases by Russian painters—Makovsky's "Portrait of a Man" and Brodsky's "Rural Landscape"—gifts from the American industrialist Armand Hammer. Other priceless gifts have been donated by the Tajik poetess Gulrukhsor Safieva, and by the family of the famous Russian bass Fyodor Chaliapin. There are also contributions from individual Soviet citizens and from enterprises and organizations.

It is impossible to conceive of a future, however radiant, without the treasures of the past—the wooden architecture of Kizhi, the Solovetsky monastery or the ikons of Rublyov. Enthusiasts search for ancient manuscripts, revive old customs, help to restore architectural monuments.

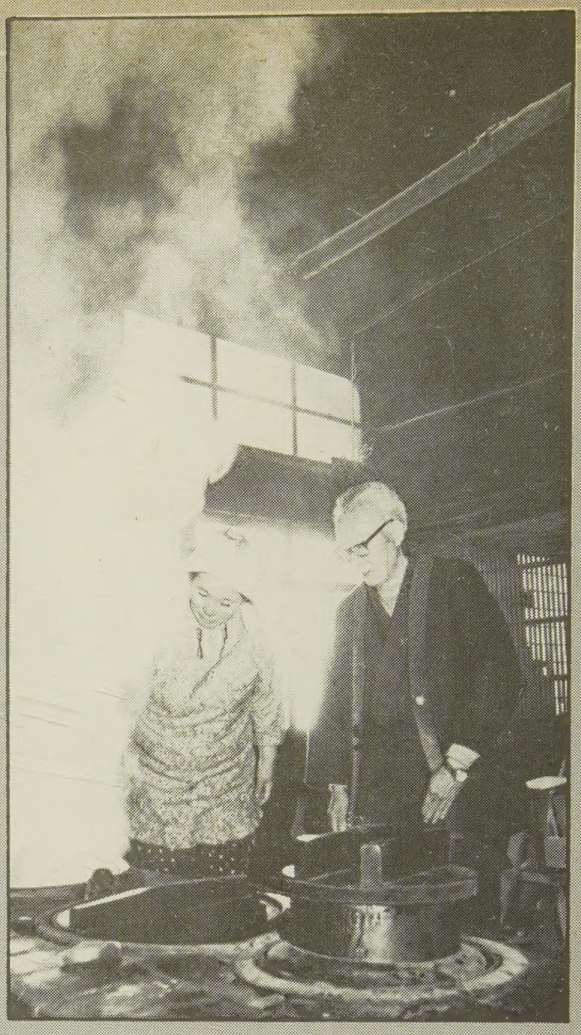
Thousands of people would like to donate money for the restoration of monuments of the past. But how to do it? Where to send it? A vast number of paintings and manuscripts are in private collections, without the benefit of professional care. How can they be properly preserved? Perhaps a gallery of private collections could be established? But how to arrange it all? The new Fund is called upon to take care of all these problems.

Armand Hammer presenting his gift to the Soviet Culture Fund at Moscow's central exhibition hall.

Photos by K. Kokoshkin



This is how tamamiso, a soy soup concentrate dating back to ancient times, is kept.



In many Japanese homes rice is traditionally cooked in large cauldrons called kamado.

INTERNATIONAL YEAR OF PEACE PHOTO AND GRAPHICS CONTEST

Compositions of boughs of pine, plum and other trees are invariable attributes of the New Year's festivities.

Photos by Tomohiko SANO (Japan)

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